DOCUMENT RESUME

ED 449 396 CG 029 844

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TITLE	Client Levels of Functioning as a Component of Substance Abuse Treatment Services Evaluation. Integrated Evaluation Methods.
INSTITUTION	Caliber Associates, Fairfax, VA.; National Evaluation Data and Technical Assistance Center, Rockville, MD.
SPONS AGENCY	Substance Abuse and Mental Health Services Administration (DHHS/PHS), Rockville, MD. Center for Substance Abuse Treatment.
PUB DATE	1999-07-00
NOTE	104p.; This document is being made available through Caliber/NEDS Contract No. 270-97-7016.
CONTRACT	270-94-0001
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	Counselor Characteristics; Evaluation Methods; Health; *Substance Abuse

ABSTRACT

This paper presents state-of-the-art models addressing issues related to coordination of treatment and evaluation activities, and integration of clinical, performance, and evaluation information. Specifically, it summarizes the background, methods, and tools needed for substance treatment professionals to reliably assess client levels of functioning (LOF). LOF measures capture important client perspectives and add to the validity of evaluations of treatment effectiveness. These measures can also serve as an important basis for the development of quality care indicators and treatment provider performance measures. Appendix A is "Integrated Evaluation Methods Package: A Guide for Substance Abuse Treatment Knowledge-Generating Activities--Executive Summary"; Appendix B is "Psychometric Properties of LOF Instruments Reviewed"; Appendix C is "Contact and Public Use Information"; Appendix D is "Instrument Domains"; Appendix E is "Annotated Bibliography"; and Appendix F is "References for Each Instrument." (Contains 7 tables and 128 references.) (MKA)

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INTEGRATED EVALUATION METHODS

CLIENT LEVELS OF FUNCTIONING AS A COMPONENT OF SUBSTANCE ABUSE TREATMENT SERVICES EVALUATION

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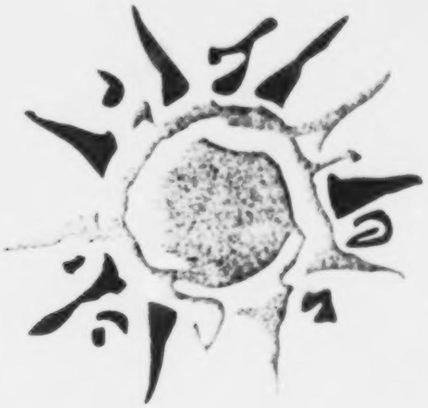

CLIENT LEVELS OF FUNCTIONING AS A COMPONENT OF SUBSTANCE ABUSE TREATMENT SERVICES EVALUATION

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This document was produced by the Center for Substance Abuse Treatment, Department of Health and Human Services, Caliber/NEDTAC Contract No. 270-94-0001 and is being made available through Caliber/NEDS Contract No. 270-97-7016.

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FOREWORD

Over the last 10 years the Center for Substance Abuse Treatment (CSAT) has accumulated a great deal of experience in substance abuse treatment evaluation implemented through coordinating centers, cross-site efforts, and national studies. The importance and value of integrating ongoing evaluation activity into a system for treating substance abuse problems is widely recognized. Also widely recognized, however, is that current evaluation generated knowledge and practice are often under-utilized, due in part to the lack of an integrated approach to capturing information with which to measure and improve treatment effectiveness, efficiency, and performance. CSAT recognizes that such an integrated evaluation approach will more effectively support current and future knowledge generating activities.

Based on a decade of evaluation experience, CSAT has developed the Integrated Evaluation Methods (IEM) Package, a series of conceptual and methodological applications, including concept papers, technical assistance materials, and analytic tools, to enhance CSAT-funded evaluation activities. Products in the IEM Package are organized within an evaluation framework constructed on the basis of accumulated experiences among internationally known treatment service evaluation professionals. Thus, the framework is based upon evaluation strategies, structures and approaches appropriate for substance abuse treatment evaluators and providers. The framework follows a standard set of evaluation activities: planning, selecting a design, developing data requirements and collection instruments, collecting and analyzing the data, and reporting the evaluation findings.

This concept paper and its companion documents, *Integrated Evaluation Methods: A Guide for Substance Abuse Treatment Knowledge Generating Activities; Self-Adjusting Treatment Evaluation Model; Building Team Capability to Fully Implement and Utilize the Self-Adjusting Treatment Evaluation Model; Adding "Value" to CSAT Demonstrations*; and *Performance Measurement for Substance Abuse Treatment Services*, present state-of-the-art conceptual models addressing issues related to coordination of treatment and evaluation activities, and integration of clinical, performance and evaluation information. Specifically, this concept paper summarizes the background, methods, and tools needed for substance abuse treatment professionals to reliably assess client levels of functioning (LOF).

Sharon Bishop
Project Director
NEDTAC

ACKNOWLEDGMENTS

This paper, together with the companion documents listed in Appendix A (the Integrated Evaluation Methods Package), was developed for CSAT by the National Evaluation Data and Technical Assistance Center (NEDTAC) under the guidance and direction of Ron Smith, Ph.D., Program Evaluation Branch, Office of Evaluation, Scientific Analysis, and Synthesis (OESAS). Dr. Herman Diesenhaus, former Team Leader, Scientific Analysis Team, OESAS, contributed many concepts that have been incorporated into the package. Charlene Lewis, Ph.D., former Deputy Director, OESAS, supported this and other associated efforts, with the result that state-of-the-art evaluation concepts were incorporated into many of CSAT's and SAMHSA's evaluation initiatives. Jerry Jaffe, M.D., former Director, OESAS, also contributed his breadth of experience in the substance abuse treatment and evaluation fields and his dedication to high quality treatment services evaluation and provided the national level leadership necessary for CSAT to promulgate these activities.

Caliber Associates was the prime contractor for NEDTAC in partnership with Computech, Inc.; the Lewin Group; Capital Consulting Corporation; the Center for Substance Abuse Research (CESAR), University of Maryland; the Alcohol Research Group (ARG), Public Health Institute; the Drug Abuse Research Center (DARC), University of California, Los Angeles; and the Urban Institute. Many people within the NEDTAC team contributed to this effort. Richard Finkbiner, Ph.D. was the primary author. In addition, many people within Caliber Associates contributed to this effort, including Patricia Devine, Harriet Perrine, Doug Fountain, Marsha Morahan, Robin Walthour, and Donna Caudill. Several major sections (including appendices) of this report were adapted from the draft document, Level of Functioning: A Review of Nine Instruments, which was produced by Battelle Centers for Public Health Research and Evaluation under subcontract to Caliber Associates. Mary Kay Dugan and Robert Orwin were the principal authors of that document, and their contributions were valuable and substantial.

I. INTRODUCTION

The Center for Substance Abuse Treatment (CSAT) supports the integration of ongoing evaluation within substance abuse treatment activities so as to demonstrate treatment service effectiveness and to improve treatment services and their outcomes. To this end, CSAT recommends the use of state-of-the-art evaluation methods and tools in planning, designing, and implementing treatment services evaluations. This document provides the conceptual background, methods, and tools needed for substance abuse treatment professionals to reliably assess client levels of functioning (LOF).

The document provides interested persons with three critical pieces of information related to assessment of client LOF. First, it provides an historical context and rationale for measuring client LOF. Second, it provides a detailed explication of existing instruments and technical approaches currently used to assess a variety of client functional domains. Third, it offers a rationale for including LOF measures in treatment services research and evaluations, which to date, is rarely done. This latter section may be of special interest to researchers and evaluation planners who might be interested in employing LOF measures within their evaluation designs. Client functional status measures are increasingly employed in private and public health care systems as performance indicators of quality and health care value (Kazis, 1998).

1. CONTEXT FOR THE CLIENT LEVELS OF FUNCTIONING DOCUMENT

CSAT's major evaluation goals are to: (1) increase knowledge about substance abuse treatment services; (2) improve treatment services by applying knowledge gained through knowledge development and application (KD&A) activities; (3) develop analytic methods and approaches for use in knowledge-generating activities; and (4) develop substance abuse treatment analysis databases. To meet these goals, CSAT has been sponsoring KD&A initiatives including activities that focus on homelessness, marijuana use and treatment, managed care, women and violence, and opioid treatment, as well as the replicability of exemplary treatment approaches (e.g., methamphetamine treatment) and the evaluation of best practices for targeted populations (e.g., exemplary adolescent treatment).

CSAT's evaluation experiences have reinforced the fact that substance abuse treatment evaluation involves a standard set of tasks that generally occur in the following order:

- **Planning the evaluation**, which includes setting the evaluation goals and objectives that determine the overall parameters of the evaluation

- **Selecting the evaluation design**, which sets forth the overall strategy for establishing the evaluation questions, measurement approach, and generalizability of findings
- **Developing the data requirements**, which flow from the evaluation questions and measures and include SDU, clinician, cost, and client data
- **Developing data collection instruments**, which are based on the data requirements and are developed or selected from a standard inventory of instrumentation
- **Collecting the data**, which includes the development of data management processes and tools including quality control procedures, and collecting the data
- **Analyzing the data**, which involves developing an analysis plan and conducting multiple levels of comparison; the analysis process is governed by the analysis plan and intended products and target audience(s)
- **Reporting the evaluation findings**, which includes evaluation knowledge dissemination and application within field.

CSAT has directed the development of evaluation concepts, methods, and tools to support these evaluation tasks. The evaluation tasks and corresponding evaluation methods are summarized in Exhibit I, Appendix A. As shown, the use of logic models in CSAT evaluations is part of the second stage in the evaluation process: select the evaluation design. A full discussion of the CSAT evaluation analytic framework and the other evaluation concepts and tools, is presented in the concept paper: *Integrated Evaluation Methods: A Guide for Substance Abuse Treatment Knowledge Generating Activities*. This document and the evaluation products listed in Exhibit I, is fully referenced in Appendix A, and is being made available on the Caliber Associates NEDS Contract Web site at http://neds.calib.com.

2. IMPORTANCE OF CLIENT LOF IN EVALUATIONS

The assessment of client level outcomes is an integral component of scientific research and evaluation of treatment effectiveness. A basic, core goal of substance abuse treatment is to effect substantial and enduring changes in client behaviors and useful strategies for managing their day-to-day lives. In the following section, it is argued that several important client functional domains should be included in the evaluation design. The importance of clients' daily functioning deserves prospective consideration when specifying evaluation methods and instruments. We conclude that the majority of currently employed measurement instruments used by substance abuse treatment providers fail to adequately capture a key indicator of client change, namely client LOF. This is hardly surprising, given that instruments such as the Addiction Severity Index (ASI: McLellan, et al. 1980) historically have been employed primarily to document the medical need for substance abuse treatment and to facilitate client placement into appropriate treatment settings. LOF measures could be explored for their utility as quality of care indicators and treatment provider performance measures.

Recognizing this shortcoming of current client outcomes evaluations, CSAT has recently incorporated key client LOF measures within the core data elements contained in the Minimum Evaluation Data Set (MEDS). These core client LOF data elements are described in Section IV of this document.

Briefly, the MEDS responds to the need for a uniform set of data variables to be employed across substance abuse treatment evaluations. Conceptually, the MEDS represents the core variables which must be assessed across evaluation activities (i.e., across service delivery units [SDUs] as well as across client episodes) in order to demonstrate effective treatment outcomes.

3. HOW THIS PAPER IS ORGANIZED

Briefly stated, this document is intended as a toolkit for substance abuse treatment professionals. In order to address the diverse perspectives of various evaluation stakeholders, we have organized this document into three sections:

- The section, ***'Why measure client LOF?'***, provides the rationale for assessing clients' level of functioning from historical, research, clinical practice and policy perspectives, and provides a brief overview of the concepts of social, emotional, and physical functioning.
- The section, ***LOF Instruments***, provides a summary discussion of nine instruments currently used by clinicians, evaluators and researchers to assess client LOF. Summary information is provided on the purpose(s), domains, and psychometric properties of each instrument.
- The section, ***Conclusions and Recommendations***, provides a summary statement on the importance of including LOF measures in substance abuse treatment services evaluations, and describes how such measures fit within CSAT's *Self-Adjusting Treatment Evaluation Model* (SATEM).

Researchers with a current interest in developing evaluation-specific objectives related to client LOF may choose to direct their attention to the second section of the document and to the technical appendices (especially Appendices B and D) at the end of this document. Evaluation planners, case managers, policy makers or others interested in the general rationale and methods for assessing client level of functioning may wish to concentrate on the first and third sections of this document.

II. WHY MEASURE CLIENT LEVEL OF FUNCTIONING?

In this section we offer a rationale for promoting assessments of client LOF in evaluations of substance abuse treatment effectiveness. Most treatment providers and evaluation researchers would agree that the comprehensive assessment of a client's physical, emotional and social functioning is an important foundation for the effective treatment of substance abuse disorders.

The processes of addiction and recovery, often long-term in nature for those clients with lengthy substance abuse histories, occur within a complex, evolving social context. It is now recognized that the effective planning, implementation and evaluation of treatment services depends on the availability of valid and replicable client-centered assessments. Researchers have long understood this fact--that the validity of the treatment process and outcome evaluations is increased through the use of multiple assessment procedures within outcome domains (Cambell & Fiske, 1959).

1. HISTORICAL APPROACH TO CLIENT ASSESSMENTS

Until quite recently, a medical, disease-centered model has dominated the fields of substance abuse treatment and evaluation. Within such a context, client evaluations were employed primarily to establish reliable diagnoses of specific *diseases or disorders* and to determine which treatments were most appropriate for a given clinical case. Clinician-reported client data were typically given more weight in these kinds of assessments than were client [self]-reported data.

The perspective of *disease* (e.g., morbidity and mortality) is only one of a number of valid perspectives to assessing client change, however. Clients and their families have distinct, but equally valid, ways of defining an individual's state of health. These additional perspectives need to be considered when conducting client outcomes evaluations along the continuum of care (intake, treatment, aftercare, etc.). Exhibit II-1 illustrates the range of measurement perspectives that should be considered when conducting assessments of client health status (from Dickey & Wagenaar, 1996). A fully descriptive evaluation approach would incorporate all three perspectives—disease, illness and burden.

EXHIBIT II-1
PERSPECTIVES ON HEALTH ASSESSMENT

BIO-PSYCHO-SOCIAL DOMAINS	**PERSPECTIVES:**		
	Disease (Clinical Observation)	**Illness** (Client Self-Report)	**Burden** (Family Self-Report)
Social	Social networks; role functioning	Perceived social support; role satisfaction	Social support; role satisfaction
Emotional	Neuropsycholgical status; symptoms; DSM diagnosis	Subjective moods; feelings; attributions	Feelings; concerns about future
Physical	Morbidity and mortality	Fitness v. pain or limitations in daily functioning	Stress-related illness
General	Overall disease severity	Overall health; perceived need for services	Health of family system; perceived need for services

Increased pressure to adopt more client-centered approaches to clinical care has caused outcome evaluators to place greater emphasis on the clients' perspective, incorporating concepts such as "subjective health status" and quality of life into outcomes assessments (Leplege & Hunt, 1997). Chronic diseases, such as alcoholism or diabetes, have predictable and multiple negative impacts on a client's perceived quality of life and level of everyday functioning. Therefore, client outcomes based exclusively on disease or symptom remission lacks validity for these populations.

This emphasis on clinician-reported data was also a legacy of earlier models of evaluation that assumed a scientific positivist approach to measurement and observation. Briefly, the positivist position asserts that "objective" measurements by unbiased observers (as opposed to the "subjective" measurements obtained from clients) are the only reliable measures of "the way things really are." In contrast to this position, current constructivist theories of evaluation propose that *all* measurement perspectives and activities are influenced by subjective and contextual factors (Guba & Lincoln, 1989). According to these "fourth-generation evaluators," *subjective* interpretations of the meaning of data are inescapable products of *any* evaluation activity. In short, both objective and subjective measurements need to be included in substance abuse treatment evaluations.

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These earlier evaluation models did not adequately provide for methods and instrumentation to measure changes in clients' LOF. Traditional clinical practice emphasized assessment of clients at beginning of a treatment episode, and scant attention was given to re-assessment at the end of treatment or thereafter. In order to infer changes in client health status or behaviors from the measured outcomes, evaluators must incorporate multiple, parallel assessments.

Patterns of client change across time may differ markedly between symptom status and functional status measures. For example, a client may demonstrate significant improvement in specific symptoms or *overt* behavioral consequences of addiction (e.g., has stopped using injection drugs), and yet show minimal gains in other, more subtle, areas of functioning (e.g., perceived social supports). Conversely, traditional assessments might show no change in a client's symptom status (e.g., is still using drugs), and still demonstrate improvements in specific functional areas (e.g., increased supports received from a recovery network). The typical clinical approach to client assessment focused on the stage of entry into treatment. Effective evaluation models need to incorporate client assessments

2. EVALUATING CLIENT FUNCTIONAL STATUS

The three components of (bio-psycho-social) functional status evaluation shown in Exhibit II-1 are based on conceptions of social, mental, and physical health that have evolved over the past five decades. In 1948, the World Health Organization (WHO) defined health in terms of "physical, mental, and social well-being, and not merely the absence of disease and infirmity" (WHO, 1958). The WHO definition of health parallels the increasing influence of public health concepts such as *wellness* and *prevention* within the general health care sector. The following descriptions of client functional domains reflect this emphasis on the client's perspective toward his/her quality of life.

2.1 Social Health

While the importance of social aspects of health is often recognized by research and clinical professionals, this functional domain was historically regarded as being of secondary importance when contrasted with biological and mental functioning. Also, the very concept of social health is less familiar to many lay and professional audiences (McDowell & Newell, 1996). Members of the health professions, however, are now recognizing the importance of social factors as both contextual and determinant influences on client's recovery from illness and maintenance of health (well-being). The three areas of social health most frequently assessed through LOF instruments are *social adjustment*, *social roles*, and *social support*.

2.2 Emotional Health

As described above, client's "subjective" assessments of emotional well-being or life satisfaction were historically downplayed in evaluations of treatment effectiveness. Today, there exist many scales and instruments to measure psychological health and well-being from the client's perspective. The majority of these scales place an emphasis on one or more of the following areas:

- Mental distress
- Client's primary cognitive or affective orientation (i.e., outlook or expectancies)
- Emotional responses to daily experience.

These areas are not mutually exclusive, nor do these instruments attempt to identify or distinguish specific dimensions of psychopathology. Instead they assess clients' patterns of psychological adaptation to the everyday environment.

2.3 Physical Health

The measurement of physical health, or conversely, physical disability, has a lengthy history in health services research. Since the late 1950's, the concepts of disability and physical impairment have been operationalized within numerous activities of daily living (ADL) scales. These scales, developed largely for geriatric and/or chronically ill populations, were limited to the more severe levels of disability and had limited application to those clients living in the community. In response to these limitations of the ADL scales, researchers developed a series of measures called Instrumental Activities of Daily Living (IADL) scales, which focused on activities that were essential for community life (e.g., mobility, shopping, cooking, etc.). McDowell and Newell (1996) cautioned that very few scales of physical functioning (e.g., the Medical Outcomes Study, Physical Functioning Scale [reviewed below]) are appropriate for assessing clients with the greatest functional capacities.

3. CURRENT EMPHASIS OF CLIENT ASSESSMENTS

The majority of client assessment instruments currently employed in substance abuse treatment settings emphasize three broad domains: the objective identification and documentation of the substance abuse disorder, the measurement of client characteristics that are likely to impact the treatment process, and the assessment of specific social indicators (e.g., employment) affected by a client's substance abuse patterns.

Depending on the evaluation strategy and design, there are a number of fairly standard categories of client-level data that are collected at multiple time points across a substance abuse treatment episode. Such measures have been effectively employed in many large-scale evaluations of treatment effectiveness. Examples of the client-level variables frequently collected are:[1]

- Data record management items (e.g., client and SDU identifiers, dates of service)
- Client demographics (e.g., gender, age, ethnicity)
- Drug and alcohol use
- Family and living conditions
- Education/Employment/Income
- Criminal justice status
- Substance abuse treatment services
- Past mental and physical health services
- Physical/ Sexual/ Emotional abuse history
- History of high-risk behaviors (e.g., HIV risk factors).

Within these sets of client-level variables, there are a number of specific items which have been useful in documenting treatment outcomes. Examples include the pre- and post-treatment measurement of clients' employment status, criminal behaviors, drug-use behaviors and/or sexual risk behaviors. In order to document the effectiveness of substance abuse treatment to an ever widening set of stakeholders (service providers, purchasers of services, policy makers, researchers and evaluators, funding agencies, etc.), evaluators must begin to consider the task of client assessment from the perspective of multiple evaluation audiences.

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[1] This list is a compilation of the domains represented by the Addiction Severity Index (ASI), the minimum and supplementary components of the Treatment Episode Data Set (TEDS: SAMHSA, 1995) and the MEDS.

4. EVALUATION AUDIENCES

Traditionally, evaluations were frequently conducted with a limited number of audiences given explicit consideration by the investigator. An examination of the previously cited list of client-level variable domains reveals that the most likely perspectives to be considered are those of the clinician, the researcher, and in some cases, the purchaser(s) of care. Exhibit II-2 lists these audiences and their perspectives (primary interests) regarding evaluation outcomes.

EXHIBIT II-2

EVALUATION AUDIENCES

AUDIENCE	PRIMARY DOMAIN OF INTEREST
Clinicians	Clinical status of clients
Researchers What is measurable	What is measurable
Purchasers Costs of care	Costs of care
Clients	Functioning in everyday life
Families	Impact on family
Society	Allocation of scarce resources

(after McGlynn, 1996)

As noted throughout this discussion, many client assessment frameworks currently used by clinicians and evaluation researchers emphasize a disease-symptom model of substance abuse. These models are effective in serving the narrow goal of matching substance abuse clients to a proposed treatment strategy or treatment setting. However, clinician-reported information about symptoms does not adequately capture clients' and family perceptions about their illness and disease burden (i.e., rows 4 and 5 of Exhibit 2) and therefore is only partially valid as an indicator of favorable client outcomes.

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Clients frequently want to know: "Will substance abuse treatment make me better?" Similarly, families often ask: "Will substance abuse treatment make the client easier/better to live with?" To answer these questions, evaluation outcomes must be framed in accordance with the implicit goal of *improving client functioning in everyday life*. Some mixture of clinician- and client-rated LOF items are necessary to fully understand the impact of treatment interventions from the client and family perspectives. This trend is also reflected by the increased inclusion of treatment consumers on treatment service boards, expert panels, and policy bodies.

In the next section, we review nine instruments that collect LOF information from one or more of these respective sources. Detailed information on the psychometric properties of these instruments is provided in Appendix B of this report.

III. LOF INSTRUMENTS

The two primary sources of information regarding client level of functioning are derived from clinicians' assessments and client self-reports. Clinician-reported instruments are designed to collect information from the clinician on his or her assessment of a client's level of functioning. The clinician's assessment can be based on direct observation and/or a judgment of the client's own self-reported behaviors. Client-reported instruments on the other hand, are designed to collect information about substance abuse behavior and level of functioning directly from the client. These instruments may be in the form of self-administered questionnaires or structured interviews.

Because clinician- and client-reported instruments focus on obtaining information on level of functioning from different sources, we group the nine instruments reviewed into three categories: clinician-reported instruments, client-reported instruments, or client-clinician reported instruments. Within this last category are two instruments that are essentially a "hybrid" of the former two categories. The client is the *primary* respondent for client-clinician instruments, but these instruments also contain a section for the *clinician or interviewer* to assess the validity of client-reported information and provide clinical judgments of severity of impairment.

In addition to the general descriptions of instruments presented in this section, this report also contains: a detailed discussion of the measurement properties of each instrument (Appendix B); contact information for obtaining instruments (Appendix C); detail on the functional domains assessed by each instrument (Appendix D); an annotated bibliography for each instrument (Appendix E); and specific bibliographic references for each instrument (Appendix F).

1. CLINICIAN-REPORTED INSTRUMENTS

This section describes three clinician-reported instruments: the CAFAS, the GAF, and the SLOF. Each is an example of a clinician-rated instrument that focuses on obtaining information from clinicians about their client's level of functioning.

1.1 Child and Adolescent Functional Assessment Scale (CAFAS)

The current version of the Child and Adolescent Functional Assessment Scale (CAFAS) was developed in 1994 by Hodges. It is a clinician-reported instrument designed to assess functional impairment due to behavioral, emotional, or substance use problems in children and adolescents between the ages of 7 and 17. Information to complete the CAFAS can be based on data collected directly from the youth, someone knowledgeable about the youth's behavior, or from direct observation. The CAFAS typically takes about 10 minutes for a trained rater to complete (Hodges, 1998).

Domains Assessed

The CAFAS measures social and personal functioning along a continuum beginning with severe impairment, to moderate, mild and then to minimal or no impairment (Hodges, 1998). It consists of eight scales for which a client is assessed—three scales assess role performance: School/Work (i.e., functions satisfactorily in a group educational environment), Home (i.e., observes reasonable rules and performs age-appropriate tasks), and Community (i.e., respects the rights of others and their property and acts lawfully).

The remaining five scales are: Behavior Toward Others (i.e., appropriateness of youth's daily behavior), Mood/Emotions (i.e., modulation of the youth's emotional life), Self-Harmful Behavior (i.e., extent to which the youth can cope without resorting to self-harmful behavior or verbalizations), Substance use (i.e., youth's substance use and the extent to which it is inappropriate and disruptive), and Thinking (i.e., ability of youth to use rational thought processes). In addition, there are two caregiver scales. The first assesses material needs (i.e., extent to which the youth's functioning is interfered with due to lack of resources, such as food, clothing, housing, medical attention, or neighborhood safety). The second assesses family/social support (i.e., extent to which youth's functioning is disrupted due to limitations in the family's psychosocial resources relative to the youth's needs) (Hodges, 1998).

Investigator Experience

The CAFAS has been used by researchers and clinicians in treatment planning, treatment monitoring, and outcomes assessment. Hodges and associates (1998) report that currently, many states use the CAFAS to determine eligibility for state programs and for measuring performance-based outcomes. The CAFAS has also been used in two large outcomes studies: the Fort Bragg Evaluation Project and an evaluation of demonstration grants (Center for Mental Health Services) (Hodges, 1998). These studies have shown that the CAFAS works well for youth referred from a variety of services including schools, courts, education or mental health, and is sensitive to changes in a client's behavior over time (Hodges, 1998; Hodges and Wong, 1996). We note that in studies using the CAFAS investigators have not specifically reported whether substance abuse populations were included nor have they reported it being specifically used in a substance abuse treatment setting.

1.2 Global Assessment of Functioning Scale (GAF)

The Global Assessment of Functioning Scale (GAF) was developed in 1987 (Spitzer et al., 1996). It is based on an earlier version (known as the GAS) that was a modification of the Health Sickness Rating Scale (Luborsky, 1962). The GAF is designed to measure overall psychosocial functioning and is commonly used to assess psychiatric clients at the time of admission to a mental health facility (either in-patient or outpatient). It is a clinician-reported instrument in which a client is given a single rating along a continuum from psychological sickness to health. The information necessary to complete the GAF, however, may be derived from multiple sources. The GAF is reported to take a few minutes to complete and is typically used by mental health professionals including psychiatrists and clinical psychologists (Spitzer et al., 1996).

Domains Assessed

The GAF is Axis V of a multiaxial assessment (DSM-IV and DSM-II-R) of mental disorders (Spitzer et al., 1996). It is a single-item scale for evaluating overall psychosocial functioning (psychological symptoms and occupational and social functioning) during a specified time period (usually during the previous week). Ratings on the GAF range from 1 to 100, with 1 representing the hypothetically sickest person and 100 representing the hypothetically healthiest person. The scale is divided into 10 equal intervals (10 points each) and a client is rated by the descriptor attached to each interval. The majority of psychiatric clients in treatment are rated between 1 and 70 on the GAF.

Investigator Experience

The GAF has been used in both clinical practice and research studies. It has been widely used with adults and adolescents across a variety of mental health treatment settings. As part of the official diagnostic manuals, DSM-III-R and DSM-IV, the GAF may be the most commonly used clinician rating scale of psychiatric client functioning. We found three studies that used the GAF specifically with substance abuse populations. Two of these studies were done outside of the U.S. One study compared alcoholic and non-alcoholic Chinese bipolar clients in Taiwan (Tsai et al., 1997) and the other compared substance abusing and non-substance abusing schizophrenics in Germany (Krausz, 1996). A third study, conducted in New York City, compared residential treatment outcomes for homeless mentally ill substance abusers (Nuttbrock et al., 1998).

Investigator experience using the GAS, the GAF predecessor, with substance abuse populations includes studies within mental health and drug treatment settings. Some of the studies evaluated substance abuse treatment outcomes (Charney et al., 1998; Jenkins, et al., 1992; Rounsaville et al., 1986) while other studies were interested in relating psychopathology to substance abuse (Dixon et al., 1991; Westermeyer et al., 1988). The substance abuse populations included in these studies were primarily addicted to alcohol, cocaine, heroin, benzodiazepine, or marijuana. Accompanying mental health diagnoses included schizophrenia, depression, somatization, anxiety, paranoia, low self-esteem, phobia, and bizarre speech or behavior.

1.3 Specific Level of Functioning Scale (SLOF)

The Specific Level of Functioning assessment scale (SLOF) is a multidimensional behavioral rating instrument that was developed over a three-year period (in the early 1980s) by staff at the New Jersey Division of Mental Health and Hospitals (Schneider and Struening, 1983). The instrument was designed to assist staff at the state hospitals in treatment planning for their clients. It is designed to measure directly observable behavioral functioning and daily living skills.

Domains Assessed

The SLOF consists of a list of 43 behavioral items, each of which is to be judged by a clinician or trained staff member on a five-point Likert-type scale. The items are grouped into six domains: Physical functioning (e.g., vision, hearing), personal care skills (e.g., eating, personal hygiene), interpersonal relationships (e.g., participates in groups), social acceptability (e.g., verbally abuses others), activities of community living (e.g., household responsibilities), and work skills (e.g., completes assigned tasks). In addition, an "other" item is included to give the clinician the opportunity to indicate areas of functioning not covered by the instrument that may be important for a particular client. A separate item has the rater assign a rating to his or her assessment of the client.

Investigator Experience

Our review of the literature revealed few published articles describing the SLOF. One was written by the author of the SLOF instrument (Schneider and Struening, 1983). This article describes the instrument and its psychometric properties based on a study conducted in hospitals and community aftercare agencies in New Jersey (Schneider and Struening, 1983). We found two other published studies that cited the use of the SLOF (Shah, 1994; Nuttbrock et al., 1996). In one article the SLOF was used to assess level of functioning among hospitalized insanity acquittees compared to the general inpatient population at a New Jersey State Hospital (Shah, 1994). Clients were matched for history of substance abuse disorders (68% for both groups). Nuttbrock et al., 1996, examine the relationship between psychopathology among mentally ill chemical abusers and level of functioning (as measured by the SLOF) in two types of community-based residential treatment programs. Results from this study indicated that individuals with moderate to severe psychopathology can be successfully treated in a residential treatment program requiring high levels of interpersonal involvement and functioning (Nuttbrock et al., 1996).

2. CLIENT-REPORTED INSTRUMENTS

This section describes four instruments commonly employed to measure client LOF in adults and adolescents. These instruments--the BASIS-32, SF-36, QOLI and YSR—target the client as the respondent.

2.1 Behavior and Symptom Identification Scale (BASIS-32)

The Behavior and Symptom Identification Scale (BASIS-32) was developed in 1986 by Eisen, Grob and Klein. It assesses outcomes of mental health treatment from client self-reported data. It was designed for adults receiving mental health treatment, although it has been used on adolescents (aged 14 and above). The BASIS-32 can be used to assess clients at intake, during treatment, and after treatment is completed. It can be administered either as a structured interview (in person or telephone) or a self-administered instrument. If administered through a structured interview it takes approximately 15-20 minutes to complete, while self-administered takes most clients 5-10 minutes to complete (Eisen, 1996).

Domains Assessed

The BASIS-32 was empirically derived from psychiatric inpatients' reports of symptoms and problems (Eisen et al., 1994). All items are scored into one of five subscales as follows: relation to self and others, daily living and role functioning, depression and anxiety, impulsive and addictive behavior, and psychosis. Clients are asked to indicate the degree of difficulty they have been experiencing on each item in the past week. The degree of difficulty is rated on a five-point scale as follows: 0, no difficulty; 1, a little; 2, moderate; 3, quite a bit; and 4, extreme. In addition, an overall average score is computed for the BASIS-32 (Eisen, 1996).

Investigator Experience

Included in a list of recommended outcome measures by the American Association for Partial Hospitalizations (Eisen, 1996), the BASIS-32 is widely used to assess client's progress during the course of treatment and to measure improvement after release from a treatment program (Eisen and Dickey, 1996; McLean Reports, 1995 and 1998). The BASIS-32 has been primarily used on psychiatric inpatients, but it has also been used on partial hospital and outpatient populations (Eisen, 1996).

In addition, the BASIS-32 has been used to measure substance abuse prevalence in adolescent and adult mental health inpatients (Eisen et al., 1992; Eisen et al., 1989) and to evaluate various treatment programs within mental health facilities (Sederer et al., 1992). We found through our investigation that the BASIS-32 has been used in mental health treatment settings with populations of substance abusers.

2.2 Medical Outcomes Study 36-Item Short-Form (SF-36)

The Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) was developed in 1992 by Ware and his colleagues. It is a self-administered survey of generic health status suitable for respondents 14 years of age and older. It has been very widely used in a variety of clinical and research applications including general population surveys as well as cross-sectional and longitudinal studies of specific diseases and treatments (Ware, 1996). Typically, the SF-36 can be administered (either self-administration or personal interview) in about 5-10 minutes.

Domains Assessed

The SF-36 measures eight different concepts: physical functioning, role limitations due to physical health problems, bodily pain, general health, vitality (energy/fatigue), social functioning, role limitations due to emotional problems, and mental health (psychological distress and psychological well being). An item on change in health during the past year is also included. In addition to the eight scale scores, summary physical and mental health scales can be scored.

Investigator Experience

Because the SF-36 is a general measure of health status and has well demonstrated psychometric properties it has been widely used in variety of contexts and with a wide range of populations (Ware, 1996). It has been used by investigators to monitor population health, to estimate the burden of different conditions, to conduct clinical trials of treatment effects, and to monitor outcomes in clinical practice (Ware et al., 1993). The SF-36 has been used with various substance abuse populations in a variety of settings. For example, Johnson and associates (1995) investigated psychiatric comorbidity, health status and functioning with alcohol abusers in primary care clinics. In addition, the SF-36 has been used to compare the health status of heroin users at methadone program entry with population norms and clients with medical and psychiatric problems (Ryan and White, 1996).

2.3 Quality of Life Interview (QOLI)

The Quality of Life Interview (QOLI) was developed in the early 1980s by Lehman and first published in 1982. It is designed to assess the recent and current life circumstances of severely mentally ill populations (Lehman, 1996). The instrument can be used with clients that have chronic and severe mental illnesses. While it was developed for particular use in community-based settings, it has been adapted for clients in long-term institutions as well. The QOLI is administered in a structured interview format and it takes about 45 minutes for a trained interviewer to administer (Lehman, 1996).

Domains Assessed

The QOLI has 153 questions in eight domains that measure global life satisfaction and subjective quality of life. The eight domains are living situation, daily activities and functioning, family relations, social relations, finances, work and school, legal and safety issues, and health. For each domain, there are both objective and subjective questions with the objective questions being asked before the subjective questions (Lehman, 1996). Objective indicators include items such as length of time at current residents and current employment status. Subjective indicators include items such as satisfaction with family, work and health. All of the subjective quality of life questions are measured on a seven point scale: 1 is terrible, 2 is unhappy, 3 is mostly dissatisfied, 4 is mixed (about equally satisfied and dissatisfied), 5 is mostly satisfied, 6 is pleased, and 7 is delighted.

Investigator Experience

The QOLI was first used in 1980 in a survey of severely mentally ill persons living in large board-and-care homes in Los Angeles to assess quality of life of chronic mental health clients (Lehman, 1982; 1983; 1988). The instrument has been widely used in many different capacities since. For example, it has been used to compare the quality of life of clients in different types of treatment facilities (Lehman et al., 1986; Simpson et al., 1989; Levitt et al., 1990; Lehman et al., 1991; Sullivan et al., 1992; Rosenfield and Neese-Todd, 1993). In recent years it has been used in the national evaluation of the Robert Wood Johnson Program on Chronic Mental Illness (Lehman et al., 1994), for an evaluation of Assertive Community Treatment Programs in Baltimore (Dixon et al., 1995), and as a predictor of treatment outcomes (Russo et al., 1997c).

2.4 Youth Self Report (YSR)

The current version of the Youth Self Report (YSR) was developed in 1991 (Achenbach). It is intended to be one component of a multiaxial assessment of functioning which also includes parent and teacher reports, standardized tests, physical assessment, observations, and interviews. The YSR obtains youths' self-reports of their own competencies and problems in eight areas (see domains below). It is designed for youths (ages 11-18) that have at least fifth-grade reading skills. Typically, the instrument takes about 15 minutes to complete.

Domains Assessed

The YSR includes seven items related to competency. Competency items solicit information from the youth, for example, on activities they participate in such as sports, hobbies, and chores. In addition, items related to the number of friends, amount of time spent with friends, and performance in academic activities are included. The competency items are designed to be scored on Activities, Social, and Total competence scales modeled after those in the Child Behavior Check List (CBCL/4-18). Normative data are available for the YSR competence scales (Achenbach, 1991). The YSR also contains 63 items in 8 problem domains (9 domain for boys) that are scored. The eight domains are as follows: Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior and Aggressive Behavior. In addition, a Self-Destructive/Identity Problems domain can be scored for boys.

Investigator Experience

The Youth Self-Report has been used in a variety of settings (e.g., clinic, school, and juvenile court) with youths for both clinical and research purposes (Vignoe and Achenbach, 1997; Achenbach, 1991). The YSR has been shown to be useful in both research studies and clinical practice because it measures a wide range of functioning. Topics of investigation have been equally broad with studies of suicide, diabetes, and children of alcoholics. Only two studies have used the YSR specifically in a substance abuse treatment settings, and both of these studies used only some of the YSR scales. Blood and Cornwall (1994) investigated whether the Internalizing and Externalizing scales of the YSR could predict completion of an adolescent substance abuse treatment program. They found that the Internalizing scale predicted completion for males, however results for females were less clear. The second study, by Moss and Kirisci (1995), found a positive relationship between aggressivity, as measured by the YSR Aggressive Behavior Scale and the Multidimensional Personality Questionnaire (MPQ), and greater alcohol consumption.

3. CLIENT - CLINICIAN REPORTED INSTRUMENTS

Two of the instruments reviewed in this paper, the ASI and SAOM, combine client-reported data with clinician ratings of overall functioning.

3.1 Addiction Severity Index (ASI)

The Addiction Severity Index (ASI) was developed in 1979 (McLellan et al., 1985). It is very widely used to evaluate the nature and severity of substance abuse problems for individuals in treatment settings (McLellan et al., 1996). The ASI obtains information from a client about aspects of his or her life that may contribute to a substance abuse problem. It is based on the theory that addiction must be evaluated in the context of those treatment problems that contribute to and/or result from substance use. The instrument was developed for adult populations of alcohol, drug, multiple substance, and/or psychiatric ill substance abusing individuals. The ASI is a semi-structured interview designed to be used by a trained research technician or clinical caseworker or counselor. It usually requires about 60-75 minutes to complete the interview with a client (McLellan et al., 1996).

Domains Assessed

The ASI contains 142 items that measure problems in seven domains: medical status, employment and support, drug use, alcohol use, legal status, family/social status, and psychiatric status (McLellan et al., 1996). For each domain, the client provides information regarding the frequency, duration, and the severity of the problem over the course of his or her lifetime and during the 30 days prior to the interview. Objective and subjective data are combined by the interviewer to derive a rating for the client (on a 10-point scale) for each problem area. The ASI allows for an interviewer severity rating of lifetime problems and a composite score indicating the severity of the problems in the last 30 days separately for each of the domains (McLellan et al., 1996).

Investigator Experience

Of the nine instruments reviewed, the ASI is the most widely used in substance abuse treatment settings. It is used both for clinical practice and research purposes. Investigators have extensively tested its psychometric properties and have consistently reported it to be both reliable and valid in a number of contexts (McLellan et al., 1985; Kosten et al., 1985; Rogalski, 1987; Hendricks et al., 1988).

The ASI has been used to screen and assess clients, match clients to effective treatments, define client subgroups, and assess clients after treatment. It has been used in treatment outcome studies for opiate, cocaine, and alcohol dependence (Alterman et al., 1993; Ball and Corty, 1988; Gawin et al., 1989; Kadden et al., 1990; McLellan et al., 1993;1994). Furthermore, the ASI has also been used to evaluate other related populations such as drug abusing prisoners (Wexler et al., 1988), psychiatrically ill substance abusers (Lehman et al., 1989), homeless persons with and without substance abuse problems (Lubran, 1990), and pregnant addicts and addicted mothers (Smith et al., 1990).

3.2 Substance Abuse Outcomes Module (SAOM)

The Substance Abuse Outcomes Module (SAOM) is a relatively new instrument (developed in 1995) that combines two previous outcomes modules (alcohol abuse and drug abuse modules) developed earlier by the authors (Smith et al., 1996). There are four components of the SAOM: Patient Baseline Self-Assessment, Clinician Baseline Assessment, Patient Follow-up Assessment and Medical Record Review. It is designed to monitor care among adults in substance abuse treatment settings.

The SAOM measures the types, intensity and outcomes of care received for substance abuse, and the factors that influence outcomes of care, including readiness to change. It assesses diagnostic criteria to identify a homogeneous group of clients and measures whether they meet diagnostic criteria for substance abuse or dependence. It was designed for adult substance abusers in public and private specialty care networks. All components of the SAOM are self-administered, except for the Clinician Baseline assessment and the Medical Records Review. Typically, the patient baseline and follow-up instruments each take 30 minutes to complete and the medical records review takes about 10 minutes (Smith et al., 1996).

Domains Assessed

The SAOM measures change in substance consumption, symptoms of dependence, and general functioning over time (Smith et al., 1996). Information on general functioning is measured by the MOS Short-Form 36 (SF-36; Ware and Sherbourne, 1992). The SF-36 assesses physical functioning, physical and emotional role functioning, bodily pain, general health, vitality, social functioning, mental health, and health transitions. In addition, the SAOM measures aspects of functioning relevant to substance abuse. Questions related to treatment seeking, choice of treatment, and outcomes of care comprise the third component of the instrument. The fourth and final component of the SAOM measures treatment components. These are as follows: type (pharmacotherapy, individual therapy, group therapy, 12-step programming), extent (dose, frequency, duration, number of sessions), and setting (specialty care and primary care, inpatient, outpatient, residential, aftercare, emergency room) (Smith et al., 1996).

Investigator Experience

The SAOM is currently being pilot tested as part of a corporate study on employee assistance program referral patterns (Smith et al., 1996). To date, there are no published studies describing investigator use with the SAOM; however, two articles are currently under review (Personal Communication, Kramer at CORE, September, 1998). Thus, there is very limited information currently available on the SAOM.

4. SUMMARY

In this section we provide "at a glance" summaries of the nine instruments reviewed in terms of their intended purpose, domains assessed, psychometric properties and investigator experience.

Exhibit III-1 provides a concise summary of the three clinician-reported instruments. One of the instruments was designed for children and adolescents (CAFAS), whereas the other two (GAF and SLOF) were designed to assess mentally ill adults. The CAFAS includes the most extensive assessment of individual functional domains, and includes specific items on substance use/abuse. In contrast, the GAF is relatively brief, provides a single composite measure of social, psychological and social functioning, and does not directly address substance use/abuse issues.

Exhibit III-2 summarizes the four client-reported instruments reviewed in this paper. While these four instruments have been applied to populations of substance abusers, they were originally designed for other groups such as mentally ill adults (BASIS-32, QOLI), at-risk youth (YSR), or general populations (SF-36). All of the instruments in this category have a significant research base--each instrument covers a substantial range of functional domains and the item scales for the most part tend to have adequate to excellent psychometric properties.

Lastly, Exhibit III-3 provides a summary of the two client-clinician instruments. Both instruments were designed with the specific intention of tracking client outcomes for substance abuse populations, and are therefore potentially strong evaluation tools for the substance abuse treatment researcher. Unfortunately, there are as of yet no published research findings for the SAOM. Therefore, it is likely that many researchers and clinical workers will choose to employ the more familiar and rigorously-tested ASI instrument.

EXHIBIT III-1
CLINICIAN-REPORTED INSTRUMENTS

Instrument Name, Author, & Year Published	Original Target Population	Purpose	Domains Assessed	Psychometric Properties	Investigator Experience
Child and Adolescent Functional Assessment Scale (CAFAS), Kay Hodges, 1989 & 1994	Children and adolescents (ages 7 to 17)	Evaluate program effectiveness and assist clinical staff in assigning care and tracking outcomes	Role Performance -School/work -Home -Community Thinking Behavior Toward Others Moods/Self-Harm -Emotions -Self harm behaviors Substance Use Caregiver Resources -Material needs -Family/Social support	Reliability and validity- 2 studies of youth referred for mental health problems. Psychometric properties unknown for substance abusers.	Used by researchers and clinicians in treatment planning, monitoring, and outcomes assessment for youth at risk for and referred for mental health problems.
The Global Assessment of Functioning Scale (GAF), Robert Spitzer, 1976; ©American Psychiatric Association, 1994	Mentally ill adults	Assist in the assessment of treatment needs	Psychological symptoms, Social and Occupational functioning	Limited reliability and validity information for samples of mentally ill inpatients and outpatients.	Widely used as part of the DSM III-R and DSM-IV. Most commonly used clinician-rating scale of psychological functioning.

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EXHIBIT III-1
CLINICIAN-REPORTED INSTRUMENTS (CONTINUED)

Instrument Name, Author, & Year Published	Original Target Population	Purpose	Domains Assessed	Psychometric Properties	Investigator Experience
Specific Level of Functioning (SLOF), Leonard Schneider and Elmer Struening, 1983	Mentally ill adults in state hospitals	Assist treatment staff in goal-oriented treatment planning	Physical Functioning Personal Care Skills Interpersonal Relationships Social Acceptability Activities of Community Living Work Skills	Limited information on reliability and validity available. Unknown for substance abusers.	Used primarily by clinical staff in the NJ division of Mental Health and Hospitals to assess clients.

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EXHIBIT III-2
CLIENT-REPORTED INSTRUMENTS

Instrument Name, Author, & Year Published	Original Target Population	Purpose	Domains Assessed	Psychometric Properties	Investigator Experience
Behavior and Symptom Identification Scale (BASIS-32), Susan Eisen, et al., 1986	Mentally ill adults	Assess treatment outcome from the patient's point of view	Relations to Self & Others Daily Living/Role Functioning Depression & Anxiety Impulsive/Addictive Behavior Psychosis	Well-demonstrated reliability and validity for mental health patients and subgroups of substance abusers.	Extensively used by researchers and clinicians on psychiatric inpatients. Used to assess progress during and following treatment. Less extensively used with partial hospital and outpatient populations. Substance abuse populations have been studied.
MOS Short Form-36 (SF-36), John Ware, 1992	General population aged 14 and older	Evaluation research and general populations surveys	Physical Functioning Role Limitations -Physical problems -Emotional problems Bodily Pain General Health Status Vitality Social Functioning Mental Health	Good psychometric properties based on studies with diverse medical and psychiatric samples. Unknown specifically for substance abuse populations.	Widely used by researchers and clinicians in general populations surveys as well as studies of specific diseases and treatments. Has been used in substance abuse treatment settings.

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EXHIBIT III-2 (CONTINUED)
CLIENT-REPORTED INSTRUMENTS

Instrument Name, Author, & Year Published	Original Target Population	Purpose	Domains Assessed	Psychometric Properties	Investigator Experience
Youth Self-Report (YSR), Thomas Achenbach, 1991	Youth (aged 11-18 yrs.)	Assess functioning from the client's point of view	Withdrawn Somatic Complaints Anxious/Depressed Social Problems Thought Problems Attention Problems Delinquent Behavior Aggressive Behavior Self-Destructive Behavior Activities Competency Academic Performance Social Competency	Overall acceptable. Individual scales vary on reported reliability and validity. Psychometric properties have not been reported specifically for substance abuse populations.	Used by researchers and clinicians in a variety of settings (clinic, juvenile court, schools) to assess youths' self-reported functioning. Portions of the YSR have been used with substance abusing youth in treatment programs.
Quality of Life Interview (QOLI), Anthony Lehmen, 1982	Severely mentally ill adults	Assist in the assessment of treatment needs	Living Situation Daily Activities Family Relations Social Relations Finances Work & School Legal & Safety Issues Health	Psychometric properties have been evaluated on mentally ill patients including subgroups of substance abusers.	Primarily used to assess persons with severe and persistent mental illness in community-based settings. Has been adapted for patients in long-term institutions and has been used to assess substance abusers.

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EXHIBIT III-3
CLIENT-CLINICIAN INSTRUMENTS

Instrument Name, Author, & Year Published	**Original Target Population**	**Purpose**	**Domains Assessed**	**Psychometric Properties**	**Investigator Experience**
Addiction Severity Index (ASI), A. Thomas McLellan, 1980	Substance abusing adults; alcohol, drugs, and multiple substances	Evaluate substance abuse treatment outcomes	Medical Status Employment & Support Drug Use Alcohol Use Legal Status Family/Social Status Psychiatric Status	Excellent reliability and validity demonstrated in substance abuse populations and treatment settings.	Widely used by researchers & clinicians. Used to screen & assess clients, identify treatment needs, define client subgroups, and assess post-treatment status
Substance Abuse Outcomes Module	Substance abusing adults	Monitor substance abuse treatment outcomes	Physical Interpersonal/Intrapersonal Impulse Control Social Responsibility General Health Status Bed Days Legal Status Drug & Alcohol Use Substance Abuse/Dependency Parental Substance Use Age of Onset Prior Treatment(s) Social Support Recovery Support Depression Antisocial Parenting Responsibilities	Unknown for the SAOM as a whole. No published data available. Some data for components (e.g., ASI, SF-36 items).	Only recently developed for research purposes. Studies should be forthcoming.

In this section, we provided information on the purpose of the nine instruments reviewed, the domains covered, their psychometric properties, and their use by investigators. An annotated bibliography of selected studies for each instrument is provided in Appendix C. We note that we have not attempted to assess these instruments in this report. Finally, we note that through our review of the nine instruments, we have identified several other instruments that measure client level of functioning that may warrant further investigation because of their potential use in evaluating clients in substance abuse treatment settings. Examples of these include:

- The **Treatment Outcome Prospective Study** (TOPS) funded by the National Institute on Drug Abuse, is using the TOP—self-reported instrument assessing quality of life, symptomatology, level of functioning and client satisfaction with services (measured at discharge only). The level of functioning scale addresses functioning in community, family, work, and school. (See Holcomb et al.,1997.)
- The **Drug Abuse Treatment Outcome Study** (DATOS) is using several different instruments. Some require lengthy structured clinician interviews; however, shorter versions have been and are currently being developed as part of the study. The original instruments include measures of physical, mental, and social functioning, as well as alcohol use-related problems. (See Horton, 1993.)
- The **Colorado Client Assessment Record** (CCAR), is a clinician-reported measure of client's level of functioning and personal problem profile (See Hodges K. and J. Gust, 1995.) The **Texas Christian University Psychological and Social Functioning Scales** (TCU) has been used to assess client readiness for treatment, and psychological and social functioning. (See Knight et al., 1994.)

IV. CONCLUSIONS AND RECOMMENDATIONS

As part of its substance abuse treatment evaluation framework, CSAT recognizes the importance of client LOF for the treatment planning and evaluation process. LOF measures capture important client perspectives on health and daily living, and add to the validity of evaluations of treatment effectiveness. LOF measures can also serve an important basis for the development of quality of care indicators and treatment provider performance measures (Harwood et al., 1998). Client-reported outcomes (e.g., improved satisfaction with treatments received, improved health status, etc) are increasingly recognized as valid indicators of clinical outcomes, and have particular relevance to the consumers of treatment and their families.

It is also critically important to begin to understand the costs of treatment services as they relate to incremental improvements in client functional status. Cost-benefit and cost-effectiveness studies also need to incorporate the client and family perspectives (vis a vis LOF measures) in their definitions of optimal outcomes.

Client's functional outcomes provide key feedback to service providers as well. Within CSAT's Self-Adjusting Treatment Evaluation Model (SATEM), evaluation activities, such as assessing improvements in client functioning, are continuously "fed back" to treatment planners and providers. Through this process of continuous knowledge development and treatment improvement, service providers are able to adjust or modify treatment "inputs" to optimize client outcomes.

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APPENDIX A:
INTEGRATED EVALUATION METHODS PACKAGE: A GUIDE FOR SUBSTANCE ABUSE TREATMENT KNOWLEDGE-GENERATING ACTIVITIES—EXECUTIVE SUMMARY

APPENDIX A: INTEGRATED EVALUATION METHODS PACKAGE: A GUIDE FOR SUBSTANCE ABUSE TREATMENT KNOWLEDGE-GENERATING ACTIVITIES—EXECUTIVE SUMMARY

Since its inception, the Center for Substance Abuse Treatment (CSAT) has provided Federal leadership to improve substance abuse treatment accessibility, effectiveness, and efficiency. CSAT's mission and activities have evolved from directly supporting treatment services to supporting knowledge-generating activities. This evolution is evident in the current Substance Abuse and Mental Health Services Administration policy on evaluation as described in *Evaluation Policy*, SAMHSA, 1995.

The need for an integrated model of evaluation and planning at SAMHSA is presented in "Evaluation in the Substance Abuse and Mental Health Services Administration," *Evaluation and the Health Professions*, by Marsh, Jansen, Lewis, & Straw, 1996. CSAT also supports site-specific, cross-site, and national evaluations that have provided experience with a wide array of evaluation design and implementation methods. These experiences further supported the need for an integrated evaluation strategy and led to the development of a comprehensive set of evaluation products, including concept papers, technical assistance (TA) materials, and analytic tools. Collectively, these products are referred to as the Integrated Evaluation Methods (IEM) Package. The IEM Package organizes these products within an evaluation framework that is designed to support CSAT knowledge development and application goals. The evaluation framework itself was constructed on the basis of accumulated experiences among internationally known treatment service evaluation professionals. The IEM Package reflects and incorporates evaluation experiences gained over the past decade.

Evaluation Framework and the Integrated Evaluation Methods Package

National evaluation experiences have reinforced the fact that substance abuse treatment evaluation involves a standard set of tasks that generally occur in the following order:

- **Planning the evaluation/knowledge-generating activities**, which includes selecting the substance abuse treatment issue, identifying the theoretical foundation for the intervention, determining knowledge development program goals and implementation approach, and setting the evaluation goals and objectives that determine the overall parameters of the evaluation

- **Selecting the evaluation design**, which sets forth the overall strategy for establishing the process and outcome evaluation questions, measurement approach, and generalizability of findings
- **Developing the data requirements**, which flow from the evaluation questions and measures and include: SDU, clinician, cost, and client data
- **Developing data collection instruments**, which are based on the data requirements and are developed or selected from an integrated inventory of instrumentation
- **Collecting the data**, which includes developing data management processes and tools (including quality control procedures) and conducting the data collection activities
- **Analyzing the data**, which involves multiple levels of comparison and is governed by an analysis plan
- **Reporting the evaluation findings**, which includes evaluation knowledge dissemination and application within the field.

The evaluation process outlined above provided a framework for the development of products related to these evaluation concepts and methods. Taken together, those products comprise the IEM Package.

Integrated Evaluation Methods Products

CSAT requested the development of a series of evaluation concept papers, TA materials, and tools to support and operationalize each phase in the evaluation of substance abuse treatment knowledge-generating activities. These items are included in the IEM Package. The concept papers are based on theoretical evaluation research constructs that have been adapted to substance abuse treatment services evaluation and knowledge-generating activities. The concept papers primarily support the evaluation planning phase and address such topics as the self-adjusting treatment evaluation model, cost analyses, and performance measurement. The TA materials and tools include specific evaluation methods that have direct applicability to substance abuse treatment knowledge-generating activities. The concept papers and TA materials that constitute the IEM Package are listed and briefly described in Exhibit I.

EXHIBIT I

EVALUATION FRAMEWORK AND INTEGRATED EVALUATION METHODS PACKAGE

EVALUATION FRAMEWORK	INTEGRATED EVALUATION METHODS PRODUCTS
1. **Planning the evaluation/ knowledge-generating activities**	■ **Integrated Evaluation Methods: A Guide for Substance Abuse Treatment Knowledge Generating Activities:** Concept paper that describes the development of an evaluation framework, evaluation concepts, and TA materials to support the framework. ■ **Self-Adjusting Treatment Evaluation Model:** Concept paper that describes an approach for integrating evaluation findings within treatment operations so as to adjust and improve service delivery. ■ **Building Team Capability to Fully Implement and Utilize the Self-Adjusting Treatment Evaluation Model:** Concept paper to assist treatment providers in building capabilities to integrate the self-adjusting treatment model within day-to-day operations and service delivery. ■ **Adding "Value" to CSAT Demonstrations:** The What, How and Why of Cost Analysis: Concept paper on the need for and types of cost analyses for CSAT demonstrations and knowledge-generating activities. (The Lewin Group) ■ **Performance Measurement for Substance Abuse Treatment Services:** Concept paper about the increasing importance of provider performance measurement and analyses and an explanation of the case-mix adjustment methodology. ■ **Client Levels of Functioning as a Component of Substance Abuse Treatment Services Evaluation**: Description of the rationale and methods for assessing client level of functioning and recommended core LOF data elements that could help to measure the effectiveness of treatment services received. ■ **Substance Abuse Treatment Evaluation Policy Notebook:** These materials are aimed at facilitating understanding of the SAMHSA policy for evaluation and federal regulations on client confidentiality and assisting evaluators to meet CSAT evaluation requirements. ■ **Substance Abuse Treatment Evaluation Resource Notebook:** The notebook contains evaluation bibliographies and listings of organizations, hot lines, on-line data bases, and contact information for obtaining assistance in evaluating treatment services.
2. **Selecting the evaluation design**	■ **A Guide to Process Evaluation for Substance Abuse Treatment Services:** TA tool presenting purposes of process evaluation and the application of process evaluation methods to single site and multi-site treatment services. ■ **Using Logic Models in Substance Abuse Treatment Evaluations:** TA tool describing logic model purposes and techniques for designing and planning the evaluation of treatment services. ■ **A Guide to Selecting an Outcome Evaluation Design for Substance Abuse Treatment Evaluations:** TA tool describing overall strategies for developing evaluation questions, measurement, controls, validity/reliability, sampling, design effects, and generalizability of findings. (Battelle)

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EXHIBIT I (CONTINUED)
EVALUATION FRAMEWORK AND INTEGRATED EVALUATION METHODS PACKAGE

EVALUATION FRAMEWORK	INTEGRATED EVALUATION METHODS PACKAGE
3. Developing data requirements	■ **Minimum Evaluation Data Set (MEDS): Core Data Lists:** TA tool for developing a uniform set of variables and response categories for the service delivery unit (SDU), clinician, cost, and client evaluation measures. ■ **Substance Abuse Treatment Cost Allocation and Analysis Template (SATCAAT):** User manual to analyze treatment costs by unit of service for an SDU. (Capital Consulting Corporation)
4. Developing data collection instruments	■ **Substance Abuse Treatment Services Evaluation Data Collection Instruments:** Data collection instruments that fully incorporate the MEDS and that have been field tested for validity and reliability, as follows: Service Delivery Unit (SDU) Description; Clinician Background and Practice Survey; protocols to collect Adult, Adolescent and Child (in treatment with parent) Client Data at Intake, During Treatment, at Treatment Discharge and Post Treatment; Adult and Adolescent Record Extraction forms; and a section on protection of human subjects and informed consent.
5. Collecting the data	■ **Staying In Touch: A Fieldwork Manual of Tracking Procedures for Locating Substance Abusers for Follow-up Studies (UCLA):** User manual to establish and implement client follow-up data collection systems and procedures. ■ **Strategies for Follow-up Tracking of Juvenile, Homeless, and Criminal Justice System-Involved Substance Abusers: Overview and Bibliographies, 1990-1998:** Description of tracking techniques used to increase response rates for follow-up interviews with homeless and juvenile/criminal justice involved substance abusers.
6. Analyzing the data	■ **A Guide to Substance Abuse Treatment Evaluation Data Analysis:** Recommended methods and procedures for analyzing process, SDU, clinician, cost, and client evaluation data.
7. Reporting the evaluation findings	■ **Substance Abuse Treatment Evaluation Product Outlines Notebook:** Compendium of outlines for evaluation products including evaluation plans, interim evaluation reports, final evaluation reports, replication studies, case studies, and ethnographies.

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CSAT Evaluation "Stakeholders"

Evaluation "stakeholders" are individuals, groups, or organizations that have a significant interest in how well a program or activity functions. (See P.H. Rossi, H.E. Freeman, & M.W. Lipsey, *Evaluation: A Systematic Approach, 6th Edition*, 1999.) Within the context of the IEM Package, CSAT evaluation stakeholders include CSAT senior managers, CSAT project officers, and CSAT grantees and contractors including treatment service providers, coordinating centers, study sites, site-specific evaluators, and national evaluators.

Utility of the IEM Package for CSAT Evaluation Stakeholders

While the conceptual and TA materials were developed from the perspective of the site-specific and multi-site evaluator, the concepts and TA tools have important utility for CSAT managers, project officers, and treatment service providers. The stakeholder's position determines the perspective and utility of the IEM Package concepts and tools. For example, a CSAT senior manager can use the IEM Package to acquire a comprehensive evaluation context for planning and funding the knowledge-generating activities, the project officer can use the IEM Package to ensure that GFA/RFP applications are complete and include a full complement of design, execution, and product components, and the site-specific and multi-site evaluators can use the IEM Package to ensure that evaluation designs, data collection plans, data analyses, and product development have a consistent evaluation framework and compatible data across program areas. The suggested utility of the IEM Package for CSAT evaluation stakeholders is summarized in Exhibit II.

EXHIBIT II
UTILITY OF IEM PACKAGE FOR CSAT EVALUATION STAKEHOLDERS

STAKEHOLDERS	ROLES AND RESPONSIBILITIES	IEM PACKAGE UTILITY
SENIOR MANAGERS	■ Policy development ■ Issue identification for KD&As ■ Grant/contract funding decisions ■ Overall program management ■ Sustainability ■ Dissemination ■ Long-term strategic planning ■ Program designs ■ KA activities	■ Comprehensive evaluation framework ■ Comprehensive evaluation components ■ Roles and responsibilities for local/national evaluators as well as CSAT/grantee staffs ■ Guidance for evaluation designs and products ■ Standardized evaluation measures ■ Logic models for program and evaluation design
PROJECT OFFICERS	■ GFA/SOW development ■ Grant/contract application review ■ Grant/contract monitoring ■ Knowledge-generating products ■ Identification and replication of promising practices ■ Technical assistance assessment	■ Guidelines for high-quality evaluation designs (process and outcome) ■ Logic models for program and evaluation designs ■ List of evaluation measures with instrumentation ■ Guidelines for evaluation products
GRANTEES: STUDY SITES	■ Grant applications ■ Project development, implementation ■ Local evaluation management ■ Local evaluation coordination ■ Knowledge-generating product development	■ Evaluation plan outline ■ Process and outcomes evaluation designs ■ SDU, clinician, cost, and client measures ■ Roles and responsibilities for grantee provider/evaluator staff ■ Guidelines for evaluation products
GRANTEES: MULTI-SITE EVALUATORS	■ Grant applications ■ Comprehensive evaluation designs ■ Evaluation implementation: – Data collection – Data analysis – Reporting evaluation findings ■ Evaluation product development	■ Evaluation concepts ■ Logic models ■ Evaluation designs ■ Evaluation data requirements ■ Data collection instrumentation ■ Data collection process and procedures ■ Data analysis ■ Product development
NATIONAL EVALUATORS/ SERVICES RESEARCHERS	■ Contract applications ■ Comprehensive evaluation designs ■ Evaluation implementation: – Data collection – Data analysis – Reporting evaluation findings ■ Evaluation product development	■ Evaluation concepts ■ Logic models ■ Evaluation designs ■ Evaluation data requirements ■ Data collection instrumentation ■ Data collection process and procedures ■ Data analysis ■ Product development

IEM products and other evaluation materials may be obtained from:
http://neds.calib.com

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APPENDIX B:
PSYCHOMETRIC PROPERTIES OF LOF INSTRUMENTS REVIEWED

APPENDIX B:
PSYCHOMETRIC PROPERTIES OF LOF INSTRUMENTS REVIEWED

This appendix presents detailed technical information for researchers interested in evaluating the psychometric properties of the instruments reviewed in this document. The available findings on the reliability (e.g., test-retest, internal consistency, etc) and validity of the individual instruments are summarized. Full citations for the studies may be found in the main *References* section of this document.

1. Child and Adolescent Functional Assessment Scale (CAFAS)

Reliability and validity data on the CAFAS have been generated primarily by two studies (Hodges, 1998). The first is The Fort Bragg Evaluation Project (FBEP) (Hodges and Wong, 1996; 1997). The purpose of this study was to compare two systems of care among dependents of Army personnel (ages 5 to 17) that were referred for mental health services. The second study is the national evaluation of the service grants funded by the Center for Mental Health Services (CMHS) Branch of Substance Abuse and Mental Health Services Administration of the Department of Health and Human Services (known as the "CHMS" project) (Hodges et al., 1997). The CAFAS was used in this study to evaluate a sample of seriously emotional disturbed youth that were either at risk for out-of-home placement or were being served by multiple agencies. We note that both of these studies do not specifically report whether or not they included substance abusers; thus, the information reported below on the psychometric properties of the CAFAS may or may not include a substance abusing population. In both the FBEP and CMHS studies, Hodges reports that the CAFAS has moderate to good reliability (Hodges and Wong, 1996; Hodges et al., 1998). Cronbach's alpha in the FBEP study was between .63 and .68 for the different waves of data collection (Hodges and Wong, 1996). Cronbach's alpha was slightly higher in the CMHS study (.73 at intake and .78 at 6 months) (Hodges et al., 1998). To test inter-rater reliability, Hodges and Wong (1996), trained students (1 group of undergraduate and one group of graduate students) and a group of staff to use the CAFAS. They then scored the CAFAS based on 20 (15 for staff) vignettes based on actual cases.

The correlation coefficients for the total CAFAS ranged from .92 to .96 for the three groups, and generally were above .80 for each of the subscales (Hodges and Wong, 1996). Hodges (1998) argues that the CAFAS has strong face validity because CAFAS scores can be translated into actual problem behaviors because ratings must be supported by behavioral items (e.g., such as "expelled from school"). The CAFAS can detect improvement in a child's behavior over time because changes in scores are tied to specific behaviors.

Concurrent validity was examined in the two studies by determining whether CAFAS scores were different for subgroups of youth who should differ on their level of impairment (Hodges, 1998). They hypothesized that higher levels of impairment would be observed with youth with more serious disorders and lower levels of impairment for youth diagnosed with less serious disorders. Diagnoses of disorders were taken from the clinical records and compared to CAFAS scores. Consistent with the literature on the disorders examined, youth diagnosed with the more serious disorders were rated as more impaired than youth in the other two less serious disorder groups (Hodges, 1998). Predictive validity was examined in the FBEP study and the CAFAS total score at intake was shown to significantly predict service utilization and cost (Hodges and Wong, 1997). To test convergent validity, Hodges and Wong (1996) compared CAFAS results to several client-reported instruments (the Child Assessment Schedule (CAS), Parent version of the Child Assessment Schedule (PCAS), and the Child Behavior Checklist (CBCL). The correlation between the CAFAS total score and these instruments are generally around .5.

2. Global Assessment of Functioning Scale (GAF)

Despite its widespread use as part of DSM-IV (and DSM-III-R), limited psychometric information on the GAF is available. The reliability of the GAF was evaluated during a test-retest study as part of a structured clinical interview for the DSM-III-R for samples of patients and non-patients (correlations ranged from .62 to .82) (Spitzer et al., 1996).

Validity results for the GAF have also been reported. However, these findings are inconsistent across studies, with some results indicating that the GAF is more highly related to psychiatric symptoms than social or occupational functioning (Hall, 1995; Roy-Byrne et al., 1996; Patterson and Lee, 1995). We note that none of the studies showing psychometric results for the GAF reported information separately for substance abuse populations.

3. Specific Level of Functioning Scale (SLOF)

Only one published study has been identified which describes the psychometric properties of the SLOF. In the article by Schneider and Struening (1983), findings are presented from a series of reliability and factor-analytic studies using the SLOF. More specifically, tests of inter-rater reliability, factorial validity and invariance, and the internal consistency reliability of the subscales were evaluated. These data were generated from an investigation using the SLOF with mental health clients in five community agencies and two state hospitals (Schneider and

Struening, 1983). In this study, separate tests of inter-rater reliability were conducted in the hospitals and community agencies. Inter-rater reliability was assessed by computing intraclass correlation coefficients for each item on the SLOF for groups of clients in each setting. The inter-rater reliability of individual items and of the instrument as a whole was found to be higher in the community sample than in the hospital sample (mean scores of .62 for the community and .42 for the hospital sample, respectively, across 29 common items) (Schneider and Struening, 1983). Additionally, factorial validity and invariance of the SLOF was evaluated using factor analysis.

These results indicate that the SLOF is best represented by the six factors originally conceptualized by the authors. In addition, the author's report that the findings with respect to factorial invariance support their authors' hypothesis that the factor structure of the SLOF is invariant across samples of clients from different populations. Finally, analyses were undertaken to examine the internal consistency reliability of each of the subscales of the SLOF. Internal consistency of all factors was shown to be identical in both the hospital and community agency sample. Most factors were found to have a reliability of .92 or greater in both samples (Schneider and Struening, 1983).

4. Behavior and Symptom Identification Scale (BASIS-32)

Several reliability and validity studies have been conducted on the BASIS-32 (Eisen et al., 1997; Eisen et al., 1994; Hoffmann et al., 1997; Russo et al., 1997a). Eisen et al. (1997) collected BASIS-32 data for outpatients from three hospital-based clinics and one community mental health center. Ten percent had a primary diagnosis of alcohol and/or drug addiction. Eisen et al. (1994) examined the psychometric properties of BASIS-32 using a sample of inpatients that were admitted to a private psychiatric hospital in 1986. Twenty-four percent were diagnosed with a substance abuse disorder. Hoffmann et al., (1997) replicated the Eisen study with a sample of adults (over 18 years old) and adolescents (between 12 and 18) admitted to a private psychiatric facility. Forty percent of the adult sample and 37 percent of the adolescent sample were diagnosed with concurrent substance abuse problems. Russo et al., (1997a) examined inpatients in two psychiatric wings in a state funded hospital. Thirty-eight percent had a concurrent substance abuse diagnosis.

Four reliability studies have been conducted on BASIS-32 (Eisen et al., 1997; Eisen et al., 1994; Hoffmann et al., 1997; Russo et al., 1997a). These studies report similar reliability coefficients for the instrument. The studies were conducted on four different samples and used two different methods of data collection: interview (Eisen et al., 1997; Eisen et al., 1994) and self-administration (Eisen et al., 1997; Hoffmann et al., 1997; Russo et al., 1997a). The test-retest reliabilities for the subscales range from .65 for the impulsive and addictive behavior scale to .81 for the daily living and role functioning scale (Eisen et al., 1994). The same study found internal consistency reliabilities range from .63 for the psychosis scale to .80 for the daily living and role functioning scale. In addition, the total scale has an internal consistency coefficient of .89. In the Hoffmann et al. (1997) study, the internal consistency subscale coefficients range from .65 to .80 for the adult sample, and from .56 to .81 for the adolescent sample. Full-scale reliability was .91 for the adults and .92 for the adolescents. Eisen et al. (1997) report alpha coefficients ranging from .65 to .89 for the subscales, and full-scale reliability of .95. Russo et al. (1997a) also report confidence in the reliability of the BASIS-32 when administered by the respondent.

Several studies have investigated the discriminant and concurrent validity of the BASIS-32 (Eisen et al., 1997; Eisen et al., 1997; Hoffmann et al., 1997; Russo et al., 1997a). Specific scales have been shown to discriminate inpatients with depression, psychotic disorders, and substance abuse disorder, and outpatients with depressive/anxiety disorders (but not drug use disorder or psychoses). The BASIS-32 has been shown to discriminate inpatients from outpatients and patients who were rehospitalized after release from patients who were not rehospitalized. In addition, the daily living and role functioning scales are related to full-time employment. Studies examining construct validity found that overall, the BASIS-32 correlates moderately with the QOLI (Russo et al., 1997a), highly with the SCL90 (Hoffmann et al., 1997), and not at all with the GAF (Russo et al., 1997a). Specific scales of the BASIS-32 have also been shown to correlate well with similar SF-36 scales (Eisen et al., 1997). When used with adolescents, three corresponding BASIS-32 and CAFAS scales correlated significantly, but the correlation coefficients were relatively small, ranging from .19 to .40 (Hoffmann et al., 1997). In addition to its demonstrated concurrent validity, the BASIS-32 has shown predictive validity. The BASIS-32 score at intake predicted follow-up visits (Eisen et al., 1997).

5. Medical Outcomes Study 36-Item Short-Form (SF-36)

In general, the SF-36 has well tested psychometric properties based on studies with diverse medical and psychiatric patient samples. Reliability for the eight scales and two summary measures has been evaluated using internal consistency, test-retest, and alternate forms methods. In these studies, reliability of the SF-36 is well demonstrated by test-retest reliability of .43-.90 (Nerenz et al., 1992) and alternate forms reliability of .93 (McHorney and Ware, 1995). The internal consistency of the items has been demonstrated to be good, ranging from .65-.94 for different scales (McHorney et al., 1994) to .89 for the total (McHorney and Ware, 1995). The SF-36 has been validated by factor analysis, correlation of scale and summary scores with known physical and mental health status of patients, and correlation with other health instruments (McHorney et al., 1993; Ware et al., 1995). We caution that no psychometric data have been reported specifically for a substance-abuse treatment population.

6. Qualitiy of Life Interview (QOLI)

The psychometric properties of the QOLI have been fairly extensively evaluated. A study by Russo et al., (1997b) reports reliability statistics separately for substance abusers and non-substance abusers for an abridged version of the QOLI (44 items) with only seven domains. This sample included severely mentally ill and largely indigent patients admitted to two inpatient psychiatric units. About 35 percent of the patients were diagnosed with concurrent substance abuse or dependence. Another study examined the psychometric properties of the QOLI on a mentally ill population that included substance abusers (Lehman, 1988). Lehman et al. (1993) also examined the psychometric properties of the QOLI on a sample of inpatients who had been in care for less than 120 days.

Test-retest reliability coefficients vary from .20 to .98 for the objective items and from .41 to .95 for the subjective scales (Lehman, 1988). Another study examined test-retest reliability for three of the objective quality of life items and found coefficients ranging from .52 to .75. The test-retest reliability for the global life satisfaction measure was .57 (Lehman et al., 1993). The subjective life satisfaction scales show internal consistency alpha coefficients ranging from .74 to .88, while the objective items vary between .35 and .82 (Lehman, 1988). Russo and colleagues (1997b) replicated the original factor structure found by Lehman with fewer items for all scales except the satisfaction with living situation scale, indicating reliability. Additionally, they report that the internal consistency reliability coefficients for the scales were between .80 and .90 at intake and between .85 and .91 at discharge. These reliability coefficients remained high for both the substance abusing population and the non-substance abusing population.

Russo and associates (1997b) examined construct validity by comparing subjective measures with objective measures. In general these correlations were low (less than .43). The strongest relationships were found between the subjective and objective measures of the family relations and social relations domains. Lehman (1988) also examined construct validity in this manner. He also found moderate relationships with coefficients generally between .30 and .60

for inpatients and even smaller for outpatients. Russo and her colleagues (1997b) also examined discriminant validity for the QOLI. This was done by examining whether substance abusers could be differentiated from nonsubstance abusers using the QOLI. They found that substance-abusing patients reported significantly less satisfaction globally, and with their living situation, family relations, safety and finances. In addition, they found that substance abusers had twice the rate of arrests and homelessness than non-substance abusing patients (Russo et al., 1997b). Convergent validity was tested by comparing aspects of the QOLI with the Heinrichs-Carpenter Quality of Life Scale (QLS) (Lehman et al., 1993). The correlation coefficients were generally significant, but low, with measures from the same point in time being more strongly associated.

7. Youth Self-Report (YSR)

A search for information related to the psychometric properties of the YSR revealed a few validity and reliability studies summarized by Achenbach (1991). The test-retest reliability of the YSR was examined in a general population sample for two different intervals (one averaging 7 days apart and the other 7 months apart) (Achenbach, 1991). Results from this analysis revealed that test-retest reliability coefficients are higher for shorter intervals as compared to longer intervals (i.e., 7 day test-retest vs. 7 month test-retest); for girls compared to boys; and, for the total scales (competence and problems) compared to individual scales (Achenbach, 1991). Additionally, content, criterion-related, and discriminant validity have been examined by Achenbach (1991). In the validity studies, Achenbach (1991) reports that the YSR discriminates between demographically matched referred and nonreferred youths from mental health services. We note that none of the psychometric properties were reported specifically for substance abusing populations.

8. Addiction Severity Index (ASI)

Early evaluations of the ASI's psychometric properties were derived from studies of all male veteran populations (McLellan et al., 1980; Emrick, 1984). These studies (by both the authors and independent investigators) provided initial evidence that the ASI was both reliable and valid for this population. Subsequent testing of the ASI has shown it to be a reliable and valid instrument for many other populations and across a variety of settings (McLellan et al., 1996).

Reliability studies report excellent test-retest and inter-rater reliability (McLellan et al., 1980; McLellan et al., 1985). For example, in a study conducted in three treatment centers, inter-rater reliability coefficients ranged from .84 to .95 for each of the scales and averaged .89. for the full scale (McLellan et al., 1985). These coefficients remained high even for subpopulation included in the study (i.e., alcohol/drug dependent, male/female, and black/white). In addition, test-retest analysis showed that information from the ASI was consistent (correlation of .92 or greater) over a 3-day period and for different interviewers (McLellan et al., 1985). In another study of homeless persons with substance use disorders, results showed good reliability for the scale scores (>.60) but some mixed reliability for individual items (Drake et al., 1995). The investigators found higher reliability when items were based on a recent time interval, for example, and also with younger patients, females and individuals with lower severity of psychiatric problems.

Several studies have also shown the instrument to have predictive, concurrent, and discriminant validity across a range of patient types, treatment settings and languages (see McLellan et al., 1985, 1996; Kosten et al., 1985; Rogalski, 1987; Hendricks et al., 1988). In addition, the authors report that normative data are available for many subgroups (e.g., men and women entering treatment for alcohol, opiate, and cocaine dependence; prison populations, homeless populations, pregnant substance abusers and psychiatrically ill substance abusers) (McLellan et al., 1992).

9. Substance Abuse Outcomes Module (SAOM)

While components of the SAOM have been validated in pilots conducted in inpatient, residential, and outpatient substance abuse treatment centers, the SAOM is relatively new and no published psychometric data are available on the entire instrument (Personal Communication, Kramer at CORE, September 1998).

APPENDIX C:

CONTACT AND PUBLIC USE INFORMATION

APPENDIX C
CONTACT AND PUBLIC USE INFORMATION

Instrument	Author(s)	Contact Information	Permission to Use
Clinician-Reported Instruments			
Child and Adolescent Functional Assessment Scale (CAFAS)	Kay Hodges, Ph.D.	Kay Hodges Functional Assessment Systems, L.L.C. 2140 Old Earhard Road Ann Arbor, MI 48105 (734) 769-9725 (734) 769-1434 (fax) e-mail: hodges@provide.net	The CAFAS is copyrighted. Contact author for permission.
The Global Assessment of Functioning Scale (GAF)	Robert L. Spitzer, M.D.	American Psychiatric Association Washington, DC	Permission to use is assumed as part of the DMS-IV.
Specific Level of Functioning (SLOF)	Leonard C. Schneider, D.S.W. and Elmer L. Struening, Ph.D.	National Association of Social Workers (NASW) Press 750 First St., NE, Suite 700 Washington D.C. 20002-4241 (202) 408-8600 (202) 336-8312 (fax)	Contact authors for permission.

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Instrument	Author(s)	Contact Information	Permission to Use
Client-Reported Instruments			
Addiction Severity Index (ASI)	A.Thomas McLellan, Ph.D.	Center for Study of Addiction University of Pennsylvania School of Medicine 1 Commerce Square, Suite 1120 2005 market Street Philadelphia, PA 19103 (215) 665-2880 (215) 665-2892 (fax) e-mail: mclellan@research.trc.upenn.edu	The ASI is in the public domain and there is no charge for its use.
Behavior and Symptom Identification Scale (BASIS-32)	Susan V. Eisen, Ph.D., Mollie C. Grob, M.S.W., and Diana L. Dill, Ed.D.	Susan V. Eisen Department of Mental Health Services Research McLean Hospital 115 Mill Street Belmont, MA 02178 (617) 855-2190 (617) 855-2948 (fax) email: lacahill@shore.net	BASIS-32 is copyrighted. Mental health providers have been given permission to use BASIS-32 to assess outcomes of their own clients.
MOS Short Form – 36 (SF-36)	John Ware	John E. Ware Medical Outcomes Trust The Health Institute New England Medical Center Box 345, 750 Washington Street Boston, MA 02111 (617) 426-4046	The Medical Outcomes Trust (MOT) grants permission to use the SF-36 without charge.
Quality of Life Interview (QOLI)	Anthony F. Lehman	National Computer Systems P.O. Box 1416 Minneapolis, MN 55440	Available in public domain for nominal cost. There are no users' fees.
Substance Abuse Outcomes Module (SAOM)	G. Richard Smith, Jr., M.D., Thomas Babor, Ph.D., Audrey Burnam, Ph.D., Kathryn M. Rost, Ph.D., Robert Drake, M.D., and Kim Heithoff, Sc.D.	Center for Outcomes Research and Effectiveness University of Arkansas for Medical Sciences 5800 West 10th Street, Suite 605 Freeway Medical Tower Little Rock, AR 72204 (501) 660-7500/(501) 660-7542	The SAOM is copyrighted. It can be used without a charge as long as patients are not charged.
Youth Self-Report (YSR)	Thomas M. Achenbach	Child Behavior Checklist One South Prospect Street Burlington, VT 05401-3456 (802) 656-8313, -2608, -4563 email: checklist@uvm.edu	The YSR is copyrighted. Contact the author for permission.

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APPENDIX D: INSTRUMENT DOMAINS

APPENDIX D
INSTRUMENT DOMAINS

Instrument	Domains	# of Items in Domain	Example Question in Domain
Clinician-Reported Instruments			
CAFAS	Role performance - School/Work Subscale	1 scale	Severe - Out of job or school due to behavior Moderate - Frequently disobeys school rules Mild - Occasionally disobeys school rules Minimal - Reasonably comfortable and competent in roles
	Role performance - Home Subscale	1 scale	Severe - repeated acts of intimidation toward household Moderate - Deliberate damage to the home Mild - Has to be prodded to get him/her to do chores Minimal - Minor problems satisfactorily resolve
	Role performance - Community Subscale	1 scale	Severe - Deliberate fire setting with malicious intent Moderate - Serious and/or repeated delinquent behavior Mild - Plays with fire on occasion Minimal - Youth does not negatively impact community
	Thinking	1 scale	Severe - Strange/bizarre behavior due to delusions Moderate - Frequent distortion of thinking Mild - Expression of odd beliefs Minimal - Thought is not disorder or eccentric
	Behavior Toward Others	1 scale	Severe - Attempted or accomplished sexual assault Moderate - Frequently mean to other people or animals Mild - Poor judgment or impulsive behavior Minimal - Able to establish/sustain age-appropriate relationships
	Moods/Self-Harm - Moods/ Emotions Subscale	1 scale	Severe - Depression is accompanied by suicidal intent Moderate - Emotional blunting Mild - Sad, withdrawn, hurt, or anxious Minimal - Can express strong emotions appropriately
	Moods/Self-Harm - Self-Harmful Behavior Subscale	1 scale	Severe - Has a clear plan to hurt self, or really wants to die Moderate -Talks or repeatedly thinks about harming self Mild - Repeated non-accidental self-harmful behavior Minimal - Not indicative of tendencies toward self-harm
	Substance use	1 scale	Severe - Has blackouts/drinks alone/cannot stop drinking Moderate - Behavior potentially endangers self or others Mild - Infrequent excess without serious consequences Minimal - Has only "tried" them; does not use them

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APPENDIX D (CONTINUED)
INSTRUMENT DOMAINS

Instrument	Domains	# of Items in Domain	Example Question in Domain
CAFAS (continued)	Caregiver Resources - Material Needs Subscale	1 scale	Severe - Youth's need for food, clothing, housing, medical Moderate - Frequent negative impact on youth's functioning Mild - Occasional negative impact on the youth's functioning Minimal - Able to use community resources as needed
	Caregiver Resources - Family/Social Support Subscale	1 scale	Severe - Severe or frequent domestic violence takes place Moderate - Failure of caregiver to provide emotional support to youth who has been traumatized or abused Mild - Frequently family arguments and/or misunderstandings resulting in bad feelings Minimal - Parental supervision is adequate
GAF	One scale to rate overall psychological, social, and occupational functioning	1 scale	Patients are scored according to descriptions of functioning as related to interest and involvement in a wide range of activities, social effectiveness, life satisfaction, occupational and school functioning, and symptoms (depression, anxiety, insomnia, obsessions, suicidal ideation, delusions or hallucinations, violent or manic behavior, personal hygiene, speech). One difficulty in scoring is that individuals may fall into more than one category, depending on the type of functioning.
SLOF	Self-Maintenance	12	Vision; Hearing; Speech; Walking; Use of hands/arms; Toileting; Eating; Personal hygiene; Dressing; Grooming; Care of own possessions; Care of own living space
	Social functioning	14	Accepts contact; Initiates contact; Communicates effectively; Engages in activities without prompting; Participates in groups; Forms and maintains friendships; Asks for help when needed; Verbally abuses; Physically abuses self or others; Destroys property; Is fearful; Takes property from others; Performs repetitive behaviors
	Community Living Skills	17	Household responsibilities; Shopping; Handling finances; Use of telephone; Traveling from residence without getting lost; Use of public transportation; Use of leisure time; Recognizing/avoiding common dangers; Self-medication; use of community services; Basic reading, writing, and arithmetic; Has employable skills; Works with minimal supervision; Is able to sustain work effort; Appears at appointments on time; Follows verbal instructions accurately; Completes assigned tasks

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APPENDIX D (CONTINUED)
INSTRUMENT DOMAINS

Instrument	Domains	# of Items in Domain	Example Question in Domain
Client-Reported Instruments			
ASI	Medical Status	11	Lifetime hospitalizations; Chronic problems
	Employment and Support	24	Education and training; Skill; Longest full-time job; Recent employment pattern
	Drug Use	27	Abuse history; Abstinence; OD's, DT's; Lifetime treatment
	Alcohol Use	27	Abuse history, Abstinence, OD's, DT's; Lifetime treatment
	Legal Status	30	major charges; Convictions; Current charges; Current criminal involvement
	Family/Social Status	26	Stability/satisfaction - marital; Stability/satisfaction - living; Satisfaction with free time; Serious conflicts; Lifetime problems with relatives
	Psychiatric Status	22	Lifetime hospitalizations Present and lifetime symptoms
BASIS-32	Relation to self and others	7	Feeling close to others; Recognizing and expressing emotions; Relationships outside family; Realistic about self and others; Lack of self-confidence; Goals and direction in life; Relationships with family
	Daily living and role functioning	9	Managing day-to-day life; Role functioning (either work, school, or household responsibilities); Satisfaction with life; Leisure time and recreation; Apathy of lack of interest in things; Confusion, concentration, memory problem; Developing independence and autonomy
	Depression and anxiety	6	Suicidal feelings and behavior; Depression and hopelessness; Physical symptoms; Isolation and loneliness; Fear, anxiety, or panic; Adjusting or major life stresses
	Impulsive and addictive behavior	6	Impulsive or illegal behavior; Taking illegal drugs or misusing drugs; Drinking alcoholic beverages; Uncontrolled or compulsive behavior; Controlling temper, anger, violence; Mood swings, unstable moods
	Psychosis	4	Unreal thoughts or beliefs; Manic or bizarre behavior; Hearing voices or seeing things; Sexual activity or preoccupation

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APPENDIX D (CONTINUED)
INSTRUMENT DOMAINS

Instrument	Domains	# of Items in Domain	Example Question in Domain
MOS SF-36	Physical Functioning	10	Vigorous activities; Moderate activities; Lifting/carrying groceries; Climbing stairs; Bending, kneeling, or stooping; Walking; Bathing
	Role-Physical	4	Cut done time spent on work; Accomplished less than you would like; Had difficulty performing work or other activities
	Bodily Pain	2	Amount of bodily pain in past 4 weeks; how much pain interfered with normal work
	General Health	5	General health; health compared to one year ago
	Vitality	4	Full of pep; have a lot of energy; feel worn out; feel tired
	Social Functioning	2	Has physical or emotion problems interfered with normal social activities
	Role-Emotional	3	Cut down time spent on work; Accomplished less than you would like; Had difficulty performing work or other activities
	Mental Health	5	Been a nervous person; felt calm and peaceful; felt down in the dumps; felt downhearted and blue; been a happy person
QOLI	Living situation	21	Objective - length of time at current residence; quality of living circumstances Subjective - satisfaction with food; satisfaction with rules; satisfaction with community
	Daily activities and functioning	23	Objective - participation in various activities int he past week Subjective - satisfaction with amount of time to do what you want; satisfaction with the amount of relaxation
	Family relations	6	Objective - frequency of family activities Subjective - satisfaction with family relations
	Social relations	12	Objective - frequency of social contacts Subjective - satisfaction with social relations
	Finances	27	Objective - financial support in the past year from various sources, amount of financial support; whether respondent handles money, whether had enough money to cover expenses Subjective - satisfaction with amount of money, amount of money available to spend for fun

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APPENDIX D (CONTINUED)
INSTRUMENT DOMAINS

Instrument	Domains	# of Items in Domain	Example Question in Domain
QOLI (continued)	Work and school	28	Objective - current employment status, hours worked per week, whether looking for work, whether respondent has been a student in the past year, level of schooling Subjective - satisfaction with job, the people you work with, the number of hours worked, amount paid, being a student, school, other students
	Legal and safety issues	8	Objective - victim of violent or nonviolent crime during the past year, whether arrested, whether spent nights in jail Subjective - satisfaction with personal safety, finding a policeman if you need one
	Health	8	Objective - general health status, health status compared to six months ago Subjective - satisfaction with health, medical care, emotional well-being
SOAM	Physical	3	Eating properly; physical health; physical appearance
	Interpersonal	3	Hurt family; damaged relationships with friends; damaged social life, popularity, or reputation
	Intrapersonal	3	Unhappy; guilty or ashamed; growth
	Impulse Control	3	Foolish risk; impulsive; accidents
	Social Responsibility	3	Failed expectations; money problems; too much time or money lost
	General Health Status	11	SF-36 questions
	Bed Days	2	# of days in last month in bed all or most of the day; # days reduced activity during past month
	Legal Status	1	Probation/parole
	Drug & Alcohol Consumption	9	Drinking/using past month, past 6 months; quantity and frequency; most problematic substance
	Substance Dependency	12	Drinks/used more than intended; desire to reduce or control; time spent; physically hazardous; reduced activities; continued use despite problems; marked tolerance; withdrawal

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APPENDIX D (CONTINUED)
INSTRUMENT DOMAINS

Instrument	Domains	# of Items in Domain	Example Question in Domain
	Substance Abuse	7	Unable to fulfill major role obligations; physically hazardous; continued use despite interpersonal problems; recurrent legal problems
SOAM (continued)	Severity Substance Dependency	17	Alcohol or drug use caused arguments; neglect of family or friends; stopped by police; needed to use more; used to combat hangover or withdrawal; couldn't cut back; continued use despite problems
	Severity Substance Abuse	12	(see above for dependency severity)
	Parental Substance Abuse	1	Natural parent had serious drinking or drug problem
	Age of onset	1	Age began regular drinking or drug use
	Previous treatment	2	# time received formal treatment; attended self-help group
	Social support	7	Types of relationships with people
	Support of sobriety	3	People suggested treatment; people commented positively or shown approval for not using
	Depressive	3	2 weeks or more in past year when felt depressed; 2 years or more when felt depressed most days; felt depressed much of the past year
	Antisocial	20	Childhood truancy, lying, stealing; Adulthood lying, violence, legal problems; frequent job changes, job absenteeism; tardiness
	Parenting Responsibilities	1	# adults/# children in household
YSR	Withdrawn	7	Would rather be alone; refuses to talk; secretive; shy, timid; underactive, unhappy, sad, depressed, withdrawn
	Somatic Complaints	9	Feels dizzy, overtired; aches, pains; headaches; nausea; eye problems; rashes, skin problems; stomachaches; vomiting
	Anxious/ Depressed	16	Lonely; cries a lot; fears impulses; needs to be perfect; feels unloved; feels persecuted; feels worthless; nervous, tense; fearful, anxious; feels too guilty; self-conscious; suspicious; unhappy, sad, depressed; worries; harms self; thinks about suicide

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APPENDIX D (CONTINUED)
INSTRUMENT DOMAINS

Instrument	Domains	# of Items in Domain	Example Question in Domain
	Social Problems	8	Acts too young; too dependent; doesn't get along with peers; gets teased; not liked by peers; clumsy; prefers younger kids; withdrawn
YSR (continued)	Thought Problems	7	Can't get mind off thoughts; hears things; repeats acts; sees things; strange behavior; strange ideas; stores up things
	Attention Problems	9	Acts too young; can't concentrate; can't sit still; confused; daydreams; impulsive nervous, tense; poor school work; clumsy
	Delinquent Behavior	11	Lacks guilt; bad companions; lies; prefers older kids; runs away from home; sets fires; steals at home; steals outside home; swearing, obscenity; truancy; alcohol, drugs
	Aggressive Behavior	19	Argues; brags; mean to others; demands attention; destroys own things; destroys others' things; disobedient at school; jealous; fights; attacks people; screams; shows off; stubborn, irritable; sudden mood changes; talks too much; teases; temper tantrums; threatens; loud
	Self-Destructive/ Identity Problems (boys only)	12	Act like the opposite sex; feel lonely; feel confused; deliberately try to hurt or kill self; destroy own things; jealous of others; feel unloved; feel worthless or inferior; physically attack people; have a speech problem; think about killing self; with to be the opposite sex
	Activities Competency	4	Participation and competency in sports, hobbies, and clubs; jobs or chores
	Academic Performance	1	Academic performance
	Social Competency	6	Number of close friends; hours/week spent with friends outside school; ability to get along with siblings, other kids, parents; ability to do things alone

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APPENDIX E:
ANNOTATED BIBLIOGRAPHY

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Child and Adolescent Functional Assessment Scale

Hodges, K. and M.M. Wong. (1997) "Use of the Child and Adolescent Functional Assessment Scale to Predict Service Utilization and Cost." *The Journal of Mental Health Administration*, 24:278-290.

Study Objective: The objective of the study was to identify good predictors of service utilization.
Sample: The sample consisted of 984 youths referred for mental health services.
Setting: The respondents were recruited through the mental health services at three army bases (Ft. Bragg NC, Ft. Campbell KY, and Ft. Stewart GA).
Purpose of Instrument: The CAFAS was used to predict service utilization.
Conclusions: The CAFAS was a significant predictor and the best predictor (compared to other measures of psychopathology) of restrictiveness of care, total cost, number of bed days, and total number of days of service received.

Hodges, K., M.M. Wong, and M. Latessa. (1998) "Use of the Child and Adolescent Functional Assessment Scale (CAFAS) as an Outcome Measure in Clinical Settings." *Journal of Behavioral Health Services and Research*, 25:326-337.

Study Objective: The research was used to determine the usefulness of the CAFAS as an outcome measure in mental health treatment settings.
Sample: Respondents were 179 youth in mental health treatment.
Setting: The research was conducted in clinical treatment centers in Michigan and Ft. Bragg.
Purpose of Instrument: The CAFAS is used to assess treatment outcomes.
Conclusions: The CAFAS can be used to improve services to clients, develop data bases that can be used to assess agency effectiveness, and develop research studies with data from several agencies.

Global Assessment of Functioning Scale

Charney D.A., A.M. Paraherakis, J.C. Negrete, and K.J. Gill. (1998) " The Impact of Depression on the Outcome of Addictions Treatment." *Journal of Substance Abuse Treatment*, 15:123-130.

Study Objective: The purpose of the study was to monitor the progress of depressed and non-depressed patients obtaining addictions treatment.
Sample: Seventy-five patients participated (half were addicted to alcohol: the others listed cocaine, benzodiazepine, or heroin as their primary substance).
Setting: The research was conducted in an addictions treatment unit in a Montreal hospital psychiatry department.

Purpose of Instrument: The GAS was used to measure change in global functioning.
Conclusions: The mean GAS score at intake was 54.35; three months later the mean GAS score was significantly higher, 57.95. Females showed a greater increase than males in GAS scores, although the primary substance of addiction was unrelated to GAS score increases. The intake GAS scores did not predict retention but the intake scores plus gender predicted the amount of primary substance consumption during the three months.

Dixon L., G. Haas, P.J. Weiden, J. Sweeney, and A.J. Frances. (1991) "Drug Abuse in Schizophrenic Patients: Clinical Correlates and Reasons for Use." *American Journal of Psychiatry*, 148:224-230.

Study Objective: The study was designed to determine substance abuse prevalence in schizophrenic inpatients and how substance abuse impacts treatment
Sample: The sample consisted of 83 psychotic inpatients.
Setting: The study was conducted in a New York City teaching hospital.
Purpose of Instrument: The GAS was used to compare level of functioning at intake and discharge.
Conclusions: Drug abusing and non-drug abusing schizophrenic patients did not differ in global functioning as measured by the GAS (mean scores of 43.06 and 40.48 respectively). The drug-abusing patients primarily used cannabis, alcohol, and cocaine.

Nuttbrock, L.A., M. Rahav, J.J. Rivera, D.S. Ng-Mak, and B.G. Link. (1998) "Outcomes of Homeless Mentally Ill Chemical Abusers in Community Residences and a Therapeutic Community." *Psychiatric Services*, 49:68-76.

Study Objective: The objective of the study was to compare the effectiveness of treating homeless mentally ill chemical abusers in community residences with treating them in a therapeutic community.
Sample: The sample was 694 homeless mentally ill chemical abusers in New York City (42% were admitted to their randomly assigned home and showed up for treatment).
Setting: The research was conducted in community residences and a therapeutic community residence in New York City.
Purpose of Instrument: The instrument was used to measure level of functioning at intake, and 2, 6, and 12 months.
Conclusion: Clients in both types of residences showed improvement in psychopathology and substance use, but clients in the therapeutic community showed even greater improvement.

Rounsaville, B.J., T.R. Kosten, M.M. Weissman, and H.D. Kleber. (1986) "Prognostic Significance of Psychopathology in Treated Opiate Addicts." *Archives of General Psychiatry*, 43:739-745.

Study Objective: The study was designed to link psychiatric disorders to outcomes as measured by the GAS, ASI, Beck Depression Inventory, and Social Adjustment Scale.
Sample: The sample consisted of 361opiate addicts.
Setting: The research was conducted in the addictions treatment center at the Connecticut Mental Center (associated with Yale University School of Medicine).
Purpose of Instrument: The GAS was used to measure global functioning.
Conclusions: A factor analysis of outcome measures grouped the GAS with time using illicit opiates, a factor called substance use impairment. ASI measures grouped together as another factor labeled current functioning, while psychosocial adjustment was measured by the Social Adjustment Scale, number of arrests, social functioning, and the Beck Depression Inventory. Legal problems and medical disability measures comprised the other two factors. Only the psychosocial and current functioning factors were related to the diagnosis of psychiatric disorders.

Specific Level of Functioning

Nuttbrock, L., M. Rahav, J. Rivera, D. Ng-Mak and E. Struening (1998). "Mentally Ill Chemical Abusers in Residential Treatment Programs: Effects of Psychopathology on Levels of Functioning." *Journal of Substance Abuse Treatment*; 14:269-274.

Study Objective: The research was designed to assess the association between psychopathology among substance abusers and functioning in two types of community-based residential programs.
Sample: Homeless adult male substance abusers with at least two psychiatric hospitalizations and a recently diagnosed DSM-III-R disorder (those unable to complete the screening interview or had a history of extreme violence were excluded) were included in the study. The most typical diagnosis was depression, although anxiety, psychotic ideation, cognitive disorientation, and hostility were also common.
Setting: The research was conducted in a therapeutic community and community residence homes in New York City. The therapeutic community is a "high demand" treatment that includes group therapies and well-defined rules. The community residences are "low demand" treatment that is the least restrictive alternative to inpatient care.
Purpose of Instrument: The SLOF was used to measure interpersonal functioning in residential treatment settings.
Conclusions: Mentally ill substance abusers were shown to adapt well to residential programs. More improvement in functioning was found for clients in the therapeutic community than in the community residence homes.

Schneider, L.C. and E.L. Struening. (1983) "SLOF: A Behavioral Rating Scale for Assessing the Mentally Ill." *Social Work Research and Abstracts*, 19:9-21.

Study Objective: The study tested the psychometric properties of the SLOF Behavioral Rating Scale.

Sample: The sample included 173 community agency clients and 982 state hospital clients.
Setting: The study was conducted at 5 community aftercare agencies and 2 state hospitals.
Purpose of Instrument: The SLOF measured observable behavioral functioning and daily living skills of mentally ill clients.
Conclusions: The SLOF rates 6 areas of functioning with inter-rater reliability ranging from .51-.72. The internal consistency of the 6 areas range from .57 to .98.

Shah, P.J., W.M. Greenberg, and A. Convit. (1994) "Hospitalized Insanity Acquitees' Level of Functioning." *Bulletin of the American Academy of Psychiatry Law*, 22:85-93.

Study Objective: The study assessed the length of inpatient stay and the level of functioning for insanity acquittees (NGRIs) and compare them to a group selected to control for age, ethnicity, Axis I diagnosis, and history of substance abuse.
Sample: The sample consisted of 62 insanity acquittees and 62 matched controls with principal diagnoses of schizophrenia and schizoaffective disorder vastly predominating. Case and controls matched on gender, history of substance abuse disorder, ethnicity and Axis 1 diagnosis, age, years ill, and current length of stay.
Setting: The research was conducted in an inpatient state hospital.
Purpose of Instrument: The SLOF was used to determine level of functioning in an inpatient state hospital.
Conclusions: Results supported their hypothesis that the NGRI patients appeared to be functioning better than controls. The NGRI patients had significantly higher scores on the personal care skills score and social acceptability score, but did not score higher on the interpersonal relationships score of the SLOF.

The Addiction Severity Index

Alterman, A.I., A.T. McLellan, and R.B. Shifman. (1993) "Do Substance Abuse Patients with More Psychopathology Receive More Treatment?" *The Journal of Nervous and Mental Disease*, 181:576-582.

Study Objective: The study was designed to examine the association between the severity of substance abuse disorder and the amount of treatment received.
Sample: The study was conducted on data from 104 alcohol dependent and 100 cocaine dependent males enrolled in an abstinence-oriented rehabilitation program.
Setting: The research was conducted in day program in the Philadelphia Veterans Affairs Medical Center and an inpatient program in the Coatesville Veterans Affairs Medical Center.
Purpose of Instrument: The ASI was used to measure the psychopathology of the individual before treatment.
Conclusions: Those patients who were the most severe substance abusers received the most treatment.

Drake, R.E., G.J. McHugo, and J.C. Biesanz. (1995) "The Test-Retest Reliability of Standardized Instruments among Homeless Persons with Substance Use Disorders." *Journal of Studies on Alcohol*, 56:161-167.

Study Objective: This study examined the test-retest reliability of several instruments that measure substance abuse among homeless individuals.
Sample: The subjects were 189 randomly selected homeless persons with alcohol or drug abuse problems.
Setting: The research was conducted at multiple sites that provided treatment and services to homeless populations.
Purpose of Instrument: The ASI was used to test test-retest reliability of the instrument.
Conclusions: The test-retest reliability scores for the ASI ranged from .64 to .86 for the whole sample.

Hodgins, D.C. and N. El-Guebaly. (1992) "More Data on the Addiction Severity Index: Reliability and Validity with Mentally Ill Substance Abuser." *Journal of Nervous and Mental Disease*, 180:197-201.

Study Objective: The purpose of the study was to examine the reliability and validity of the ASI on men and women substance abusers who were also diagnosed with a major psychiatric disorder.
Sample: The sample included 152 substance abusers with a major psychiatric disorder.
Purpose of Instrument: The ASI is used to test reliability and validity of the instrument.
Conclusions: The reliability and the validity of the instrument is adequate for use on this type of population.

McLellan, A.T., A. I. Alterman, D.S. Metzger, G.R. Grissom, G.E. Woody, L. Luborsky, and C.P. O'Brien. (1994) "Similarity of Outcome Predictors Across Opiate, Cocaine, and Alcohol Treatments: Role of Treatment Services." *Journal of Consulting and Clinical Psychology*, 62:1141-1158.

Study Objective: The study was designed to examine 6-month outcomes of substance abusers to assess the patient and treatment factors that are associated with better outcomes.
Sample: The sample consisted of 649 substance-dependent adults in inpatient and outpatient treatment.
Setting: The research was conducted in 22 publicly and privately funded substance abuse treatment centers.
Purpose of Instrument: The ASI was used to measure treatment outcomes.
Conclusions: The treatment outcomes were not affected by demographic characteristics, the type of drug problem, the type of treatment facility, or source of funding. Negative outcomes are predicted by greater substance use before treatment.

McLellan, A.T., I.O. Arndt, D.S. Metzger, G.E. Woody, and C.P. O'Brien. (1993) "The Effects of Psychosocial Services in Substance Abuse Treatment." *Journal of the American Medical Association*, 269:1953-1959.

Study Objective: The purpose of the study was to examine if adding counseling, medical, and psychosocial services improved methadone maintenance programs.
Sample: The sample consisted of 92 male opiate users in methadone maintenance programs.
Setting: The study was conducted in the Philadelphia Veterans Affairs Medical Center's methadone maintenance program.
Purpose of Instrument: The ASI was used to evaluate the treatment outcomes of three treatment groups.
Conclusions: Those in the treatment group without counseling showed the least improvement, those in the treatment group with some counseling showed better improvement, and those in the enhanced counseling treatment group showed the most improvement in their ASI scores.

McLellan, A.T., G.R. Grissom, P. Brill, J. Durell, D.S. Metzger, and C.P. Obrien. (1993) "Private Substance Abuse Treatments: Are Some Programs More Effective than Others?" *Journal of Substance Abuse Treatment*, 10:243-254.

Study Objective: This study compared four privately funded treatment programs.
Sample: The sample consisted of 198 substance dependent adults.
Setting: The research was conducted in four privately funded (two inpatient and two outpatient) treatment programs in the Philadelphia area.
Purpose of Instrument: The ASI was administered at intake and 6 months following discharge to measure the nature and the severity of the substance abuse problem.
Conclusions: The study found significant improvements at the 6 month follow up and differences between the programs that were associated with the amount of treatment provided and the type of treatment received.

McLellan, A.T., L. Luborsky, J. Cacciola, J. Griffith, F. Evans, H. Barr, and C.P. O'Brien. (1985) "New Data from the Addiction Severity Index: Reliability and Validity in Three Centers" *The Journal of Nervous and Mental Disease*, 173:412-423.

Study Objective: The objective of this analysis was to test reliability and validity of the ASI.
Sample: The respondents included 181 patients from three treatment centers.
Setting: The study was conducted in three drug/alcohol treatment centers.
Purpose of Instrument: The ASI was used to test the reliability and validity of the instrument.
Conclusions: The study found that the instrument is reliable and valid. In addition, the measure has seven subscales that were found to be independent.

McLellan, A.T., L.Luborsky, G.E. Woody, K.A. Druley, and C.P. O'Brien. (1983) "Predicting Response to Alcohol and Drug Abuse Treatments: Role of Psychiatric Severity. *Archives of General Psychiatry*, 40:620-625.

Study Objective: The research objective was to compare outcomes of subjects involved in different types of treatments.
Sample: The sample consisted of 460 alcoholic and 282 drug addicted males.
Setting: The research was conducted in six rehabilitation programs for substance abusers.
Purpose of Instrument: The ASI was used to measure treatment outcomes six months after completing the rehabilitation program.
Conclusions: This study found that matching patients to treatments showed no evidence of being effective. Patients who were not severely impaired due to their substance abuse problem improved in any treatment program, and patients who were severely impaired showed little improvement. Patients who were in the midrange of impairment did benefit from matching.

McLellan, A.T., G.E. Woody, L. Luborsky, C.P. O'Brien, and K.A. Druley. (1983) "Increased Effectiveness of Substance Abuse Treatment: A Prospective Study of Patient-Treatment Matching." *Journal of Nervous and Mental Disease*, 171:597-605.

Study Objective: The study was designed to test a set of hypotheses that were previously developed to match patients to the most appropriate treatment program.
Sample: The sample included 130 alcohol dependent and 256 drug dependent individuals.
Setting: The research was conducted in the Philadelphia and Coatesville Veterans Administration Medical Centers.
Purpose of Instrument: The ASI was used to assess any matches that were especially beneficial or problematic.
Conclusions: The matched patients fared much better during treatment and at the 6-month outcome than the unmatched patients.

Behavior and Symptom Identification Scale

Eisen, S.V. and B. Dickey. (1996) "Mental Health Outcome Assessment: The New Agenda." *Psychotherapy*, 33:181-189.

Study Objective: The purpose of the article was to review outcome research in mental health and to provide a case study for assessing outcomes within a clinical setting.
Sample: Respondents were 949 patients who were discharged from the hospital in 1995. Twenty-two percent were diagnosed with substance abuse.
Setting: A mental health clinic in McLean Hospital was the setting.
Purpose of Instrument: BASIS-32 was used to assess outcomes of patients.
Conclusions: In each subgroup of patients (gender, age, and initial diagnosis), significant improvement in BASIS-32 scores were obtained from admission to discharge.

Eisen, S.V., M.C. Grob, and D.L. Dill. (1989) "Substance Abuse in an Inpatient Psychiatric Population." *McLean Hospital Journal*, 14:1-22.

Study Objective: To assess the level of substance abuse in a hospitalized psychiatric population.
Sample: The sample consisted of 294 hospitalized mental health patients.
Setting: The research was conducted in a psychiatric hospital.
Purpose of Instrument: BASIS-32 was used to determine if the respondent was a substance abuser and whether the substance abuse affected other areas of functioning.
Conclusions: Almost half of the men and a quarter of the women in a psychiatric hospital were also substance abusers. Substance abusers differed from non-abusers only on the Impulsive/Addictive BASIS-32 scale.

Eisen, S.V., D.J. Youngman, M.C. Grob, and D.L. Dill. (1992) "Alcohol, Drugs, and Psychiatric Disorders: A Current View of Hospitalized Adolescents." *Journal of Adolescent Research*, 7:250-265.

Study Objective: This study examined the level of substance abuse among an adolescent psychiatric patient population.
Sample: Thirty-eight adolescents (29 males and 19 females) participated in the study.
Setting: The research was conducted in a psychiatric hospital.
Purpose of Instrument: BASIS-32 was used to determine the prevalence of substance abuse in a hospitalized adolescent population and to measure the level of dysfunction in other aspects of life among substance abusers.
Conclusions: Over half of the males and a third of the females reported some difficulty with alcohol and/or drugs on the BASIS-32. In addition, substance abusers reported significantly more difficulty than non-abusers on the interpersonal relationships, daily living skills, depression/anxiety, and impulsive/addictive BASIS-32 scales.

Sederer, L.I., S.V. Eisen, D. Dill, M.C. Grob, M.L. Gougeon, and S.M. Mirin. (1992) "Case-Based Reimbursement for Psychiatric Hospital Care." *Hospital and Community Psychiatry*, 43:1120-1126.

Study Objective: The study examined two groups of psychiatric patients and compared outcomes to determine if an innovative financing program affected quality of care.
Sample: The sample consisted of 29 respondents in the contract group and 27 respondents in the control group.
Setting: The research was set in McLean Hospital.
Purpose of Instrument: BASIS-32 was used to evaluate outcomes of the patients in both the contract group and the control group.
Conclusions: There were no significant differences between the two groups in any of the five BASIS-32 subscales at admission and discharge. In addition, the contract group showed

significant improvement from admission to discharge on all scales except the psychosis scale and the control group showed significant improvement from admission to discharge on all scales except the impulsive/addictive scale.

MOS 36-Item Short-Form Health Survey

Johnson, J.G., R.L. Spitzer, J.B.W. Williams, K.Kroenke, M. Linzer, D. Brody, F. deGruy, and S. Hahn. (1995) "Psychiatric Comorbidity, Health Status, and Functional Impairment Associated with Alcohol Abuse and Dependence in Primary Care Patients: Findings of the PRIME MD-1000 Study." *Journal of Consulting and Clinical Psychology*, 63:133-140.

Study Objective: This study investigated the psychiatric comorbidity, health, and functioning of primary care patients with alcohol abuse and dependence (AAD).
Sample: The sample consisted of 1000 patients (mean age = 55 years), 51 of whom were diagnosed by their physicians with alcohol abuse and dependence (AAD). Seventy-two percent of the AAD patients were male.
Setting: The study was conducted in 4 academic medical center primary care clinics.
Purpose of Instrument: The SF-20 was used to assess quality of life.
Conclusions: Nearly half of the AAD patients had other psychiatric disorders, although they had fewer other disorders than did patients with mood, anxiety, eating, and somatoform disorders. AAD patients who had other psychiatric disorders had poorer health and greater functional impairment than patients without psychiatric disorders or than AAD patients without psychiatric comorbidity. However, AAD patients with no other psychiatric disorders did not differ from patients with no psychiatric diagnoses on the 6 scales of the SF-20.

Ryan, C.F. and J.M. White. (1996) "Health Status at Entry to Methadone Maintenance Treatment Using the SF-36 Health Survey Questionnaire." *Addiction*, 91:39-45.

Study Objective: The research compared the health status of heroin users at methadone program entry with population norms and patients with minor medical, major medical and psychiatric problems.
Sample: The research was conducted on 100 heroin users who were 18-42 years old (mean age of 29).
Setting: The study was conducted in a public methadone program in South Australia.
Purpose of Instrument: The SF-36 measured aspects of health that are important to all patients.
Conclusions: Methadone patients had significantly worse physical and psychological health than the general population. Methadone patients scored significantly worse than patients with minor or major medical conditions on all but the physical functioning scale. Methadone patients were most similar to psychiatric patients, but had significantly lower levels of general health and social functioning. The degree of pain reported was higher for users who consumed more heroin.

Men scored higher than women at program entry for role-emotional functioning, pain, and social functioning.

Volk, R.J., S.B. Cantor, J.R. Steinbauer, and A.R. Cass (1997). "Alcohol Use Disorders, Consumption Patterns, and Health-Related Quality of Life of Primary Care Patients." *Alcoholism: Clinical and Experimental Research*, 21:899-905.

Study Objective: The study examined the association of alcohol use to health-related quality of life, as measured by the SF-36, in primary care patients.
Sample: The sample consisted of 1333 primary care patients - 103 were alcohol-dependent and 48 were alcohol-abusers.
Setting: The study was conducted at the Family Practice Center of the University of Texas Medical Branch.
Purpose of Instrument: The SF-36 measured health-related quality of life.
Conclusions: Alcohol dependence was related to poorer quality of life in all 8 areas of functioning measured by the SF-36. Co-occurrence of mood/anxiety disorders with alcohol dependence was common and moderated the effects of alcohol dependence on mental functioning. The authors believe the SF-36 is a good measure for alcohol dependent patients.

Quality of Life Interview

Lehman, A.F. (1983) "The Effects of Psychiatric Symptoms on Quality of Life Assessments Among the Chronic Mentally Ill." *Evaluation and Program Planning*, 6:143-151.

Study Objective: The study investigated the effects of patients' impaired mental states on their ability to assess the quality of their lives.
Sample: The sample was 278 chronically mentally ill adults living in supervised community residences (3/4 were Caucasian and 2/3 were male). All participants had a history of psychiatric hospitalization. Diagnoses included schizophrenia, alcoholism, organic brain syndrome, affective disorder, and substance abuse.
Setting: The research was conducted in licensed board-and-care homes in Los Angeles County.
Purpose of Instrument: The QOLI was used to assess quality of life in 8 life areas. The QOLI was specifically designed for this study.
Conclusions: Mental health does not significantly change how patients assess the quality of their lives, except in the areas of reporting their health and satisfaction with health care.

Lehman, A.F., L.T. Postrado, D. Roth, S.W. McNary, and H.H. Goldman. (1994) "Continuity of Care and Client Outcomes in the Robert Wood Johnson Foundation Program on Chronic Mental Illness." *The Milbank Quarterly*, 72:105-122.

Study Objective: The objective of the study was to compare two cohorts on continuity of care, case management, and outcomes at two follow-up times (2 months and 12 months) after being discharged from the hospital.
Sample: The sample consisted of 661 mentally ill clients who were hospitalized for 24-hour-care in Baltimore, Cincinnati, Columbus, or Toledo. The sample was divided into two cohorts based on dates of interview.
Setting: The research was conducted in cities that received the Robert Wood Johnson Foundation Program on Chronic Mental Illness. Cohort 1 participated at the inception of the program (November 1988 to June 1990), and Cohort 2 started several months later (September 1990 to February 1992).
Purpose of Instrument: To assess program effects on outcomes.
Conclusions: Modest effects were found in some cities for some outcomes, but overall cohort 2 did not show significantly more improvement than Cohort 1. Unfortunately, Cohort 1 was not a true pre-program baseline measure, because the program began in 1986.

Lehman, A. F., N.C. Ward, and L.S. Linn. (1982) "Chronic Mental Patients: The Quality of Life Issue." *American Journal of Psychiatry*, 139:1271-1276.

Study Objective: The study was designed to examine board-and-care homes and assess the quality of life of the patients living in board-and-care homes.
Sample: The 278 mentally ill residents of board-and-care homes in Los Angeles. About 15% were alcohol or other substance abusers.
Setting: The study examined board-and-care homes.
Purpose of Instrument: The QOLI was used to assess the quality of life of those living in board-and-care homes.
Conclusions: Over half of the respondents reported that they were "mostly satisfied" in most areas of their life. This study found that for many mentally ill persons board-and-care homes were a good alternative to hospitalization.

Russo, J., P. Roy-Byrne, C. Jaffe, R. Ries, C. Dagadakis, and D.Avery. (1997) "Psychiatric Status, Quality of Life, and Level of Care as Predictors of Outcomes of Acute Inpatient Treatment." *Psychiatric Services*, 48:1427-1434.

Study Objective: The research looked at five types of variables (demographic characteristics, psychiatric status, functional quality of life, satisfaction with quality of life, and level of care) to determine if they affected patient outcomes.
Sample: The sample consisted of 1,053 mental patients in a public hospital in Washington State. Thirty-seven percent were substance abusers.
Setting: The study was conducted in an inpatient public hospital.
Purpose of Instrument: An abridged version of the QOLI was used to assess treatment outcomes.

Conclusions: The patient's quality of life prior to treatment affected four different treatment outcomes (percentage change in PSAS score, re-hospitalization, satisfaction with life at discharge, and insight into illness at discharge).

Russo, J., P. Roy-Byrne, D. Reeder, M. Alexander, E. Dwyer-O'Connor, C. Dagadakis, R. Ries and D. Patrick. (1997) "Longitudinal Assessment of Quality of Life in Acute Psychiatric Inpatients: Reliability and Validity." *The Journal of Nervous and Mental Disease*, 185:166-175.

Study Objective: The study was designed to examine the reliability and validity of the QOLI as an outcome measure for acutely ill psychiatric inpatients.
Sample: The sample consisted of 981 psychiatric inpatients diagnosed as substance-abusing or non-abusing depressed bipolar, depressed unipolar, schizophrenic, manic, or other patients.
Setting: The study was conducted in inpatient units at a Seattle hospital.
Purpose of Instrument: The QOLI was used to assess objective functional status and subjective patient satisfaction in 7 life domains.
Conclusions: Overall the reliability and validity of the QOLI was good for all substance use/diagnostic groups.

Simpson, C.J., C.E. Hyde, and E.B. Faragher. (1989) "The Chronically Mentally Ill in Community Facilities: A Study of Quality of Life." *British Journal of Psychiatry*, 154:77-82.

Study Objective: To compare patients' quality of life in three different treatment settings (a district general hospital, a hostel ward, and group homes.
Sample: The sample included 34 mentally ill patients, 11 from a general hospital, 10 from a hostel, and 13 from group homes.
Setting: The research was conducted in a general hospital, a hostel ward, and group homes.
Purpose of Instrument: The QOLI was used to assess quality of life.
Conclusions: The quality of life was better for those in group homes (especially in satisfaction with living situation, social contacts, finances, and comfort). In addition, the researchers found that those in the hostel reported better quality of life than those in the hospital.

Substance Abuse Outcomes Module

Rost, K.M., R.L. Ross, J. Humphrey, S. Frank, J. Smith and G.R. Smith (1996). "Does This Treatment Work?: Validation of an Outcomes Module for Alcohol Dependence." *Medical Care*: 34:283-294.

Note: This article is about the Alcohol Outcomes Module, a subcomponent of the SAOM.

Study Objective: The study was used to validate a self-administered instrument for use in alcohol treatment settings.
Sample: The research was conducted on 78 alcohol-dependent patients.
Setting: The setting was an Inpatient Substance Abuse Treatment Center at a Veterans Administration hospital and a private psychiatric hospital.
Purpose of Instrument: The instrument was used to measure the types and extent of care, the outcomes, and casemix characteristics of alcohol-dependent inpatients.
Conclusions: The instrument provides reliable estimates of group change, but lacks the precision necessary to monitor individual patients over time.

Youth Self-Report

Blood, L. and A. Cornwall. (1994) "Pretreatment Variables that Predict Completion of an Adolescent Substance Abuse Treatment Program." *The Journal of Nervous and Mental Disease*, 182:14-19.

Study Objective: The study predicted completion of an adolescent substance abuse treatment program.
Sample: The sample consisted of 132 adolescents (mean age = 16.4 years) referred to addictions treatment after assessment at an outpatient office or detoxification facility.
Setting: The research was conducted in a Nova Scotia Department of Health Drug Treatment Program.
Purpose of Instrument: The study used Internalizing (withdrawal, somatic complaints, and anxious/depressed scales) and Externalizing (delinquent and aggressive behavior scales) groupings of YSR along with other instruments to predict completion of a 12-week drug treatment program.
Conclusions: The Internalizing Score from the YSR predicted completion for males; the female data were less clear.

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Study Objective: The purpose was to link aggressivity and conduct disorder to alcohol consumption.
Sample: The sample consisted of 92 alcohol-abusing or dependent adolescents from various treatment programs plus 294 control adolescents recruited from advertising and phone calls (mean ages = 16.31 and 15.70, respectively).
Setting: The research was conducted in the Pittsburgh Adolescent Alcohol Research Center.
Purpose of Instrument: The YSR Aggressive Behavior Scale was used with the Multidimensional Personality Questionnaire to create an aggressivity factor.
Conclusions: Both heightened aggressivity and conduct disorder (measured by the DSM-III-R) are associated with greater alcohol consumption (quantity x frequency) by adolescents.

APPENDIX F:
REFERENCES FOR EACH INSTRUMENT

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